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CLAREMONT COLLEGES READING CONFERENCE

July 6 - 10, 1942

Seventh Yearbook

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## PREFACE

Peter L. Spencer, Ph.D., Professor of Education, Claremont Colleges

The 1942 Reading Conference which this yearbook reports marked a new high point among the Claremont conference series. The program was arranged to cover the period July 6 thru 10 and convenient residence facilities were provided for guests on the campus. The number and variety of presentations were increased and the attendance more than doubled.

The conference programs continue to amplify the Claremont concept that the reading process is the educative process and that a full program for reading instruction must be as broad as life is broad, (page 314). The morning sessions were devoted to discussions of problems with reading at various school levels of development. The afternoon sessions considered a number of common interests which reading serves. A significant contribution to the literature concerning the reading of printed word symbols at the secondary school level was made by members of the Southern Section of the sub-committee on Developmental Reading, a division of the California Secondary Principals Association's Committee on Curriculum. They conducted a daily session presenting pertinent topics and demonstrated techniques and materials for the teaching of developmental reading of printed word symbols.

Several years ago Anne Bryan McCall writing in *The Woman's Home Companion* made the point that everyone must learn to read himself, other people, and things. The customary conception of a program for reading instruction is not as inclusive as McCall's conception would make it. The Claremont conference series has attempted to call attention to that discrepancy and to lead the way to rectifying it.

### Reading Oneself and Reading Other People

Miss Shrodes' paper (page 286), "Exploration of the self through reading", illustrates how a skilful use of literature may contribute to one's ability to see oneself understandingly. Dr. Sicher's "How to read human minds", (page 299), indicates the value of reading persons appreciatively and with understanding. Miss Van Gundy carries the process to association with the world of people in her discussion of "Exploitation of the social world through reading", (page 323). Mrs. Pfister gives the pedagogical slant to the problem in her discussion of "Techniques for social adjustment involved in reading", (page 240). Special aspects of the process of reading people were treated in different sections of the conference. Dr. DeLong discussed the "Relationship between instructional, physical, and physiological factors in the maintenance of a well-balanced equilibrium", (page 67). Miss Kennedy, P.H.N., have consideration to "Inability or disability as associated with the reading program", (page 121). Dr. Warren told of the "Effects of physical deficiency upon educability", (page 335). Dr. Robinson indicated "Obstacles in the

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way of better nutrition", (page 259). Dr. Perkins gave a general treatment of "Physical growth factors", (page 225).

Problems with seeing and hearing were given special consideration. Mr. Hargrave, Director of the Auricular Foundation, discussed the relationship of "Hearing and reading", (page 100). Dr. Madden told of "The effect of the degree of hearing upon reading", (page 178). Dr. Purviance presented a stimulating paper on "Some aspects of seeing", (page 244). Dr. Morrison treated of "Aniseikonia as a factor in reading programs" (page 190).

### Reading Things

The term, "things" connotes, in this sense, all matters of regard which are not people or peoples' behavior. It refers to actual objects, activities, situations, etc., as well as the symbolic techniques which are used to represent such matters of regard. Bellemin's discussions of "Stories in Stones", (page 17), and "Reading the rocks" (page 10), are designed to lead to reading activities in which rocks are read as well as merely reading books about rocks. That theme is carried farther in Reddick's "Reading the soil text in the book of the land", (page 253).

Considerable emphasis throughout the conference was placed on the reading of music. Dean McCutchan's discussion of "Music: a form of reading", (page 165), sets the stage for that treatment. The implementation of music recording and the reading of recordings is described in his "Development of music notation" (page 149). Music, as an expression of people, is extremely important for our program of international understanding. Dr. Curtis' "The music of Latin America" (page 55), is particularly timely in that regard. Shuck presents another aspect of the social phases of music in "Applying the democratic method to the selection of music materials", (page 295). And Stringfield shows how "Orchestral techniques for schools" (page 321), affect social reading.

### Pedagogical problems with reading

An ever present problem connected with the planning and administering of instruction with any regard is that of determining the nature of that which the instruction is to achieve. Claremont's contribution in pointing out that the reading process is vastly more than reading printed word symbols is a pertinent and seriously needed one. Programs for reading instruction have commonly been too narrow and too restrictive in their use of types of stimuli. Printed word symbols are important but they are not the only stimuli which people must learn to read. Newby's discussion of "Reading readiness at the kindergarten and early first grade level" (page 208), clearly illustrates this point as it affects the younger pupils. It is further amplified in Smith's presentation of the "Place of activity in reading development at the kindergarten-primary level", (page 307). Perrelet indicates "Types of reading activities in the elementary grades", (page 232). Nordahl considers "Procedures for developing comprehension in reading" (page 218). Her treat-

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ment is supplemented by Madden's discussion of "Materials for developmental reading" (page 183). Christensen describes "Types of reading situations in the upper grades" (page 22), and the high school level is comprehensively treated by Lowers and by Serrurier representing the State Committee for Developmental Reading in the Secondary Schools, (pages 137 and 271). Danielson discusses the "Teaching of reading to gifted children" (page 59). Genung treats of the all important problem of "Techniques for motivation in the classroom" (page 85) and "Radio in education in time of crisis" (page 93) is emphasized by Goudy. Lesser shows how movie and other picture materials may be utilized in "Serving a city in wartime" (page 125).

Weida illustrates in her "Report of experiment..." (page 340) how test results may be made the basis of an effective teaching program and Warburton comments pertinently on such practices in "Evaluating the tests of reading development" (page 330). Finally an overview of the effort to establish the reading of printed word symbols is well presented in Hockett's tracing of "Materials and methods since the New England Primer" (page 109).

Attempts at a more functional communication are an important part of any broad reading program. Forsberg's discussion of "How to make use of Basic English in the classroom" (page 73) and Cooper's "Through the hat and over the head: a talk on Basic English" (page 37), and Angell's "Literature and semantics" (page 1) are pertinent in this regard.

The Conference presents its yearbook record with confidence that those teachers and administrators who were not privileged to be present when the discussions were held will find much in the recorded comments which will challenge their thoughts. Those who attended the conference and who participated in the discussions will find the yearbooks an invaluable reference source for refreshing and amplifying their ideas.

The yearbook series of which this is the seventh member constitutes an important resource for those who care to study the psychology of the reading process. Customary practices in that regard have been less fruitful than they might have been had they not become restricted thru defining the reading process in terms of a peculiar form of stimulus. Printed words are read but so are spoken words. In like manner one must read things, and people. The yearbooks will be found helpful in developing school instruction programs which are based upon this demonstrably valid concept. Word symbols represent but they do not contain meanings. They stand for but are not in themselves ideas.

## LITERATURE AND SEMANTICS

Joseph W. Angell, Pomona College

Literature is an ancient art and semantics is a new, a very new linguistic discipline. Obviously there is a close and inescapable relationship between the old art and the new discipline, for both are rooted in the fact of language. Semantics is at present a much abused term, and the word "literature" involves varying concepts that have never been successfully defined. In traditional linguistics semantics was the study of meanings, as opposed to phonetics, the study of sounds. In traditional linguistics the term "meaning" was limited and did not have the significance we now associate with this word since the pioneer work of Breal, Bloomfield, Ogden, Richards, and others of the modern authorities in the new study of the theory of meaning.

In the older, non-functional or purely descriptive linguistics, semantics was the study of historical changes in meanings, meanings in this sense being those fixed and arbitrary definition-meanings given by the authority of the dictionary. Semantics, in the older linguistics, was in no sense regarded as the functional or operative study of the psychology and philosophy of language habits that it is now believed to be. At the present time, as we all know, semantics is not only an explanatory rather than a descriptive approach to language functions but is virtually a philosophy of language, a rationale of linguistic structure which has recently commanded extraordinary attention in many areas of knowledge. "Semantics" has become both a general and a specific term, a word possessing widely divergent popular and technical meanings.

Properly speaking, semantics is still a purely linguistic term, one to be applied with scrupulous care only to one particular area of linguistic science. Popularly, it has become a jargonistic descriptive term to cover almost any kind of loose talk about any phase of language. Certain people speak of "semantic reaction" with the same careless ease they spoke a generation ago of superiority and inferiority complexes. Some of this loose and unlicensed bandying of the term is the fault of the men who have done significant pioneer work in enlarging the field of technical semantics; some of it is the inevitable result of the all too human desire to find a verbal formula or phrase that can be applied as a universal cure-all for every shape and size of human ailment, social and individual, physical and mental.

What I am interested in this afternoon is an examination of the "legal" and disciplined application of modern semantic theory to the field of creative literature. I should like to get at a root definition which will provide a tangible meaning for any legitimate use of the term that may be desired. The simplest, and, I believe, the most accurate definition at present available is that offered by Mr. Charles W. Morris in his Foundation of the Theory of Signs:

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<sup>1</sup> C. W. Morris, "Foundation of the Theory of Signs", International Encyclopedia of Unified Science, Vol. I, No. 2, p.21

## Angell 2

"Semantics deals with the relation of signs to their designata and so to the objects which they may or do denote."

Morris expands this first definition with the following:<sup>1</sup>

"As in the case of the other disciplines dealing with signs, a distinction may be made between its pure and descriptive aspects, pure semantics giving the terms and the theory necessary to talk about the semantical dimension of semiosis,<sup>2</sup> descriptive semantics being concerned with actual instances of this dimension.

It will at once be observed from these statements that semantics as here used is a philosophical, though not yet a metaphysical term, with immediate applications in the fields of language, mathematics, science, and psychology.<sup>3</sup> There is implied in this definition an empirical conception of a world of solid fact which it is the business of signs to reveal to the human mind. The mind itself, from this point of view, will be regarded as a linguistic structure based upon neurological behavior, and there will be no possibility of idealistic, mentalistic, or a priori theories of mind, ideas, nor any tolerance of a pre-established identification of language and reality. It is clear from the work of Richards, whose emphasis is primarily literary and psychological, from that of Bloomfield, whose emphasis is that of behavioristic linguistics, and from the work of Morris, Carnap, and Lewis, whose emphasis is primarily "scientific", mathematical, and logical, that modern scientific semantics searches for a method of accurate, objective denotation of the facts of reality. The method of modern semantics is that of scientific empiricism. It cannot be too strongly emphasized that in the current usage of the term in scientific circles "semantics" has now come to denote a discipline which seeks to provide a medium for making assertions about reality in terms which are accurate and verifiable. Carnap, the most energetic, perhaps, of the scientific semanticists<sup>4</sup> has reached a position in which he would have the study of semantics become primarily a study of the structure and syntax of languages which are "capable" of denoting the facts of reality.<sup>5</sup>

1 Morris, loc. cit.

2 The term "semiosis" is defined by Morris as "The process in which something functions as a sign", ibid, p.3. "Semiosis" and "Semiotic" as variously defined by Morris, op. cit., need not concern us here in this elementary discussion of terms.

3 The Logical Postivists, the most active group at present working in the field of scientific semantics have as one of their objects the abolishment of "unimportant" metaphysical speculations.

4 The most active adherents of the scientific semanticists are members of the philosophical movement known as Logical Postivism which at present has its headquarters at the University of Chicago.

5 At the time this paper was written Carnap's most recent book, Introduction to Semantics, Cambridge, Mass., 1942, had not yet appeared. A few statements from this volume may perhaps add clarity to the discussion which appears above:

## Angell 3

In the interest of economy of time, I shall have to be dogmatic and condense a large amount of theoretical discussion into a number of "propositions" in order that we may have a frame-work of ideas and have some better idea of where we are in this discussion of Literature and Semantics. I shall offer the following:<sup>1</sup>

1. Semantics is a discipline which aims to be both scientific and "philosophical."
2. The subject matter of this discipline is the nature and use of signs.
3. Signs are signs; that is, they are devices by which the mind is able to declare to itself or to another mind the existence of the objects of reality.
4. An object of reality is a "fact".
5. A fact is anything that exists.
6. Anything that exists is anything that exists; that is, what exists may be identified, denoted, described by a sign.
7. Signs are communicable; that is their meaning as well as their function.
8. A language is a system of signs used to communicate "facts".
9. A language implies a plurality of signs.
10. A plurality of signs implies the possibility of a "syntactical" relationship between the signs.
11. The possibility of syntactical relationships implies variability.
12. Variability implies that the syntactical use of signs will produce relationships.

"Semiotic, the theory of signs and languages, is divided into three parts: pragmatics, semantics, and syntax. Semantics is divided into descriptive and pure semantics; syntax is divided analogously into descriptive and pure syntax.".. p.3. "The language spoken about in some context is called the object language; the language in which we speak about the first is called the metalanguage.", loc. cit.

In his appendix, titled "Terminological Remarks", Carnap gives rather full definitions of such terms as "concept", "factual", "proposition", "semantics", "semiotic", and "syntax".

<sup>1</sup> I have here used, with some variation, the method of statement employed in L. Wittgenstein's Tractatus Logico-Philosophicus, London, p.22

## Angell 4

13. The possibility of variable syntactical relationships implies that variable meanings may be produced, these variable meaning relationships not necessarily contained in the original single and isolated signs.

The circle is now complete, and one of the great problems of language is revealed: the whole is here greater than its parts. For instance, the signs of notation in the language of music are single; in a certain sense they can be said to be verifiable and denotative. But a note is not a chord, a chord is not a theme, a thematic complex is not a composition, and a composition of notes is not necessarily a Beethoven Symphony, but a Beethoven symphony is, nevertheless, a verifiable entity made up of single, isolated facts (specific sounds created by specific media of sound) whose variable relationships contain "more" than exists in the single tonalities of sound. Music is a language, as is mathematics, as are patterned systems of phonemes arranged into syntactical relationships. Science, at least in the hands of the Logical Positivists, aims to become "the language of reality." Carnap would say that science, the syntactical relationships of verifiable physical facts, is simply the verifiable description of what is.

Now all of this must seem a long way from what we ordinarily think of as literature. But I intend to show that there are relationships of some importance between the conception of semantics I have developed here and what we know as "literature."

Anyone who has observed the definitions of literature in most textbooks, hand-books, and rhetorics, particularly those produced in the 19th century, must have observed with some dismay what an extraordinary amount of nonsense has passed, sometimes for definition, and sometimes for wisdom. We discover all sorts of meaningless "value"<sup>1</sup> definitions: Arnold's "the best that has been thought and said", Channing's "all the writings of superior minds", Moreley's "all books...where moral truth and human passions are touched with a certain largeness, sanity, and attractiveness", and the pathetic negative definition of a distinguished professor of English in the nineteenth century who said "No book that a young gentleman could not read to a young lady in the parlor of her home can properly be designated as literature." The most recent and the most extensive attempt at a definition of literature that I have discovered is T. C. Pollock's The Nature of Literature.<sup>2</sup>

1 "Value" definition here means a definition in which a meaning or worth is imposed on the reader without any attempt to define the content of that meaning or worth, or a meaning which may be said to be super-imposed on some object or concept. In this process one begins with the judgment or valuation before one has made an attempt to discover the actual nature of the object or idea to be observed.

2 The full title of this volume is as follows, The Nature of Literature: Its Relation to Science, Language, and Human Experience, Princeton, 1942.

## Angell 5

After a dense and difficult account of modern linguistic science and modern scientific theory of semantic meaning Pollock provides this wonderfully new and fresh definition: "What literature (L) expresses and communicates...are human experiences(E)." This on page 103 of a 200-page book that is easily the year's most difficult reading.

Such generalities are hardly definitions, and most of them represent attempts to inspire the dull school-boy with moralistic pseudo-aesthetic value precepts. What we want to know is what literature is; then we may be interested, from other points of view, to learn what literature does.

Remembering the earlier definitions of semantics, I want now to arrive at a definition of literature that is first functional or operative, rather than a pseudo-descriptive or value-scaled not suitable for the dark brown walls of some Harvard study of the nineteenth century. But first, one more step towards definition.

It is necessary to distinguish language, writing, and literature. Language, in its most familiar sense, is the conventional use of vocal symbols as a means of the communication of "signs". "Writing" is a device for recording language by means of visual marks. By "recording" we mean that the beholder, if he knows the language of the writer and the system of writing, can repeat the speech which the writer uttered, audibly or internally, when he set down the marks.<sup>1</sup> Literature, however carelessly defined, is always the end product of linguistic fact. Literature, as language, involves the use of signs, and is brought into existence through vocal or writing activity. Thus, in the first stage of definition, neither "writing" nor "literature" are value words. They are simply words denoting the existence of certain facts which take their origin in linguistic phenomena. But if the word literature is not to be used as an awkward synonym for writing, it must sooner or later take on some aspects of valuation. In ordinary speech, all literature is writing, but, quite obviously, not all writing is literature. What we seek is a denotation of the fact of literature. Returning to my earlier table of propositions it may be possible to find some suggestion, in terms of semantic structure, that will be helpful in defining "literature." I should like to offer this:

Literature is a verbally linguistic statement of reality, different from the scientifically linguistic statement in that it provides a more complex variety of syntactical relationships, and therefore gives a more "variable" statement of reality.

I realize that this is a hard and a dry definition of something which means so much to all of us as does "literature." Let me try to make it clear in more familiar terms.

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<sup>1</sup> L. Bloomfield, "Linguistic Aspects of Science", International Encyclopedia of Unified Science, Vol. I, No. 4, p.6

## Angell 6

We shall agree that all statements of fact must be linguistic and semantic statements; that is, they are syntactically related sign statements of verifiable reality. "The temperature of this room is 80 degrees", can be a verifiable, objective declarative statement of no complexity. Again, "This bush has a plant disease" may be a verifiable declarative statement. William Blake's "Rose, thou art sick!" is also a declarative statement, verifiable under certain circumstances. But we recognize at once that it is a statement of a different order, though not yet necessarily of a different value. What distinguishes it from the former statement if not that it is a "poetic" statement, but that it is a more complex, a more variable statement of reality. How more complex and more variable?

At this point it would be convenient to fall back upon Richard's famous distinction between referential and emotive language, or to interpret Blake's sentence by means of Empson's theories of ambiguity. But I want to take verbal ambiguity an emotive language for granted, as well known to all of us, and go on to a point of view somewhat in advance of the now familiar descriptions of how the use of emotive and ambiguous statements produces the effects known to all skilled readers of poetry.

I want to go back to the essential proposition of scientific semantics, that the effort of modern scientific semantics is to provide a language for the facts of reality. The over-worked Richardsonian distinction between emotive and referential language implies a value judgment which I believe to be dangerous, for it assumes that emotive language is somehow less reliable and is more "dangerous" than referential language, and this notion is precisely what I wish to get rid of. I want to offer for your consideration the proposition that the "language" of poetry, which is, I believe, a language of fact, is in reality the most complex and variable verbal language there is, and is, in consequence, the most complete, and in terms of the syntax of poetry, the most precise and verifiable verbal language of reality.

Do what we will, we cannot obviate the facts of reality. As human beings, we participate, with varying degrees of consciousness and completeness, in the facts of existence, and so long as we are ourselves existent, we are to be numbered among the "facts" of reality, even in the most rigidly scientific sense. The human mind, inescapably the product of linguistic capacities, is such that it creates demands of constantly increasing complexities of experience and information. You may perhaps be surprised to hear now that I want to state the proposition that poetry, the most complex of verbal-literary languages, is essentially an informative language, that as a verbal and literary linguistic medium poetry is a language of reality. If we leave out value judgments for the moment, all we need to say is that poetry(the most complex and variable form of literature) is not a better or a worse vehicle for information about reality, but that it is only a different language of reality than is the "language" of science. Let me demonstrate; Mathew Arnold has this interesting state-

## Angell 7

ment in his Essay on Maurice de Guerin:<sup>1</sup>

"The grand power of poetry is its interpretative power; by which I mean, not a power of drawing out in black and white an explanation of the mystery of the universe, but the power of so dealing with things as to awaken in us a wonderfully full, new, and intimate sense of them, and of our relations with them. When this sense is awakened in us, as to objects without, we feel ourselves to be in contact with the essential nature of those objects, to be no longer bewildered or oppressed by them, but to have their secret, and to be in harmony with them; and this feeling calms and satisfies us as no other can. Poetry, indeed, interprets in another way besides this; but one of its two ways of interpreting, of exercising its highest power, is by awakening this sense in us. I will not now inquire whether it can be proved not to be illusive, whether it does absolutely make us possess the real nature of things; all I say is, that poetry can awaken it in us, and that to awaken it is one of the highest powers of poetry. The interpretations of science do not give us this intimate sense of objects as the interpretations of poetry give it; they appeal to a limited faculty, and not to the whole man."

Closely analyzed, this statement is another way of speaking "semantically", in the terms I earlier mentioned. Notice the use of the phrase "objects without us." If we substitute the words "complex" and "variable" for the word "intimate" we are back to my original proposition; poetry is a language of reality. It is not purely emotive, it is not substitutional, but is rather the most exact and at the same time the most complex verbal statement, not of the nature of reality, but of reality itself. It does not compete with, nor does it fulfill the same functions as a mathematical language or a "scientific" language, for instance the language of symbolic logic. In terms of verbal language, as in mathematical language, we do have to reckon with the principle of numbers; numbers are variable and imply relationship; a larger number is quantitatively larger than a smaller number. Relationships are quantitatively more complex than are invariables. We cannot escape the fact that the human mind, given certain fixed neurological responses, increases, multiplies, combines, fuses these responses into variables that, if nothing else, are larger and more complex than the originals.

Let us distinguish more clearly between poetic statement and scientific statement, or between poetic information and scientific information. Both science and poetry, I submit, are languages of fact. A poem, even though it contains facts, is not a compilation of facts. It is rather, a structure of facts, an organization of information. This information is verbal, rhythmic, "musical", emotive, intellectual,

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<sup>1</sup> Essays in Criticism, Oxford, 1925. pp. 64-65

## Angell 8

and in its totality is both meaningful and purposeful. Here again, we are very close to the fundamental point of view in modern scientific semantics, for a major feature of the work of certain semanticists is the effort to supply the human mind with patterns of organization. Symbolic Logic, the "language" of the scientific semanticists, is a language of pure relationship. One of Carnap's major works bears the title The Logical Syntax of Language. In this volume, as in others, of the same school, there is revealed a most diligent concern for the "unity" and structure of language expressions and relationships.

This is a reading conference, and it would be well to relate this last phase of my remarks directly to the process of reading a poem, for all of us do teach poetry, I assume. Again I shall have to be dogmatic and cursory, in the interest of economy of time.

The dominant contemporary effort in literary criticism is the effort to improve the reading of poetry. The work of Richards, Empson, Tate, Blackmur, Burke, and Ransom, among others, has centered on the reading of the poem as poem, that is, in terms of its integral poetic structure, not in terms of social, economic, biographical, or literary history. The dominant interest of contemporary literary criticism is the poem itself, however obvious that may seem. In much the same way that the scientific semanticists are concerned with relating language to fact, so the modern critic is concerned with the poem as a fact demanding a certain type of organizational and structural analysis. The poem is considered as an entity; there is no such thing, in modern criticism, as poetry; there are only poems. The formula for the modern study of a poem is that the poem itself, the text of the words, the structure of the poem are the essential thing. Some critics have even gone so far as to dispense with meaning. Archibald Macleish's "A poem should not mean but be" (Ars Poetica), is perhaps by now a bit trite but is expressive of a dominant point of view in modern poetic criticism which is, I believe, immediately related to a similar point of view in modern scientific semantics.

I should like to use a rather long quotation from a much neglected, though very modern work of literary criticism. I wonder if you will not agree that this "program" for the reading of a poem sounds very like the program of the modern scientific semanticists as I outlined it early in the paper. The rigid discipline, the rationale of fact, object, and method, the concentration of the resources of the reader on the objectivity of the poem, the effort to perfect a system of syntactical structure, the emphatic belief that the business of communication (here it is poetic communication) is to state the facts of reality; all these might well serve as a guide for procedure for the semanticist and for the reader of poetry. The quotation is from Martin Schitze's Academic Illusions:<sup>1</sup>

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<sup>1</sup> Chicago, 1933, pp. 141-142

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A work of poetry...is an integral organic whole, and like a physical organism, it receives, except by external and injurious violence or corruptions, additions from its environment by organic assimilation only. The understanding of the poetic meaning must always begin with the determination of the essential interrelations of each term, item, or element of meaning in a poem with the whole of its structure. Any work of poetry...embodying a high degree of perfection, contains an integral unity of data which is complete within a clear and simple, however rich and comprehensive, focus or mental concentration. This set of data in their intrinsic relations is the poetic reality and constitutes the essential meaning of that poem. The total interrelation of...a whole and...parts is the poetic meaning or idea.

I have been dealing with two large and difficult topics, semantics and literature. I do not pretend that I have offered you very much in the way of final, determined conclusions. What I have attempted to do in this paper may be summarized as follows:

1. To define modern scientific semantics.
2. To indicate, somewhat superficially, the aims of modern scientific semantics as they bear upon an understanding of the nature and function of language.
3. To offer a series of propositions which both describe the effort of semantics and reveal the nature of language.
4. To show how these propositions reveal that poetry is an informative language of fact.
5. To provide a non-valued definition of literature, rooted in the notion that literature, and thereby poetry, is a linguistic fact.
6. To illustrate the significance of this definition of literature by expanding the examination of poetry as a medium for giving information about the objective world of verifiable reality.
7. To indicate, very briefly, the direction of modern literary criticism.
8. To show that the aims and methods of modern scientific semantics and contemporary theory of poetry are essentially similar.

## READING THE ROCKS

George Bellemin, Norton School and Claremont Colleges Summer Session

"And this our life exempt from public haunts  
Finds tongues in trees, books in the running brooks,  
Sermons in stones, and good in everything."

These words of Shakespeare express in a classic manner a thought similar to that more bluntly stated as the title of this paper. Many authors have written in the same vein. While the concept has probably never been misunderstood, its full meaning has seldom been consciously developed. Books about botany and geology are really directions for finding tongues in trees and sermons in stones. Then follows the hasty conclusion that one must first read a book.

Reading a book may be a short cut but it certainly is not the only way to approach the reading of the earth. We recall that the material presented in a geology book was first perceived in the rocks. So, why not read the rocks? To do so one needs mostly common sense and patience.

The purpose of the paper is to illustrate something of what has been done and of what can be done in reading the earth. Before that is done, however, it may be well to discuss the usage of the word "read". To read is commonly understood to refer to the interpretation of the printed word symbol. The inadequacy of this restrictive definition of the term becomes evident as we think of other uses of the reading process. We read blueprints, music notations, maps, and even less conventionalized things, such as a face or the history of a car's operation as indicated by the condition of its fenders. With such varied applications of the term one may become confused as to its real meaning. A dictionary will likely list several definitions of the term.

A definition that I should like to propose is that reading is simply "an interpretation of observation". It is not necessary that the observations be made in any specific manner of any particular type of object. The observation may be casual or exhaustive; and the interpretation need not be correct. With this sort of broad approach many of our daily functions are forms of reading.

The science of reading the earth is called geology. The term is almost self-explanatory. The Greek roots, "geo" or earth, and "logos", meaning discourse or science, combine to make geology or earth-science. The word made its first appearance with its present meaning about 1605. At first it was not accepted but since none better was coined, it gradually crept into the literature and became universally used.

The man who practices geology is a geologist. His work is very much like that of a doctor or a detective. He observes and records his observations; and from the interpretation of these observations he compiles a case history.

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The beginnings of geology are rather vague. Natural phenomena were worshipped. Myths and legends were built around them and used to explain their existence. A few men known as philosophers sought to explain these wonders but their theories were often colored by the myths and were equally fantastic.

As early as 614 B.C. a Greek, Xenophanes, after noticing sea shells, concluded that the hills had once been under the sea. Similar observations were made by other prominent men later in history. It is an observation with which many ancients made their bid to fame, usually believing that they were the first to advance the idea.

Today it is a fact accepted by most people that sea shells in cliffs were deposited when the area was under water. The gropings of the ancients seem to some rather pitiful and ridiculous; but they were reading the very difficult first pages of the primer of the earth. This page was barely read when its interpretation was destroyed with the coming of Christianity and the dark ages of civilization. Any beliefs conflicting with the prevalent Christian doctrine were severely discouraged. Fossils were thought to have been formed within the earth or created by the devil to confuse man.

With the Renaissance bolder and clearer thinking came to the front. More reading was done in the pages of time. The reading was for the most part incorrect, largely due to biased and incomplete observation.

Toward the end of the 1700's a controversy on the origin of rocks was holding the stage in geology. There were two schools of thought, the Neptunists and the Plutonists. The Neptunists believed all rocks were "precipitation and depositions formed in succession from water which covered the globe." The Plutonists had the other extreme view and maintained that all rocks were formed by fire. The origin of basalt, a volcanic rock, was one of the most seriously contested points. Oddly enough, one of the men that helped disprove the Neptunist theory by his own careful scientific observations was one of the greatest liars of all time, Rudolph Raspe, the creator of Baron Munchausen. The fallacies of each theory can easily be pointed out from the elevation of our present stage of knowledge. We can also see that their errors were due to a lack of careful observation; or more broadly, poor reading. The volcanic origin of some rocks and the aqueous origin of others is now universally accepted; so neither theory was totally incorrect.

This sort of reading of the earth went on for a long time. It was not till the period around 1815 that real progress was made in the art of reading the earth's face or skin.

The word skin is used because all that we can observe directly of earth is a very thin outer layer. The Grand Canyon is about a mile deep and it is only about three miles to the bottom of the deepest oil well. If the earth were reduced to scale to the size of a very large apple the known depth would be represented by a layer far thinner than

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the average apple skin. The highest mountains would be mere blemishes. Yet nearly all our geologic knowledge is obtained directly from this skin or indirectly from reactions therein.

A brief discussion of a few of the things to be observed and their meaning may help in appreciating the difficulties of the pioneers. Perhaps they may also indicate how anyone may indulge in a refreshing change of reading in an original text.

Just as in reading a book it is necessary to know the meaning of the words before the sentences release their meaning, to read the earth we must develop familiarity with the units which make up the crust. The initial building blocks of the earth as far as we know them today are infinitesimal neutral or electrically charged particles. In this paper we will start with much larger units, rocks, the words in the earth's book of the past. The alphabet which is used to make these words lists not merely 26 characters but well over a thousand. These characters are the minerals. The combinations are as varied and as rigidly restricted as the spelling of words.

Rocks may be divided into three groups. The igneous rocks are those formed from molten rock-matter. The sedimentary rocks are those whose agent of deposition was either water, wind, or ice. The last group, the metamorphics, are transformed rocks. Originally they may have been of any type but have been altered by heat, pressure, or the introduction of new material.

The meaning of rocks can be illustrated with two short examples. Igneous rocks may be subdivided into two principal groups, those extruded and solidified on the surface of the earth and those which cooled and solidified at great depths. (There is, of course, also an intermediate group which formed at shallow depths.)

Small hand specimens of rocks are all that is necessary to tell with reasonable accuracy the conditions of formation. An igneous rock that has a plainly visible grain of approximately uniform size cooled at great depths. One that has large grains in a groundmass with no visible granularity probably cooled at shallow depths or on the surface.

These conclusions were reached through several lines of evidence after a hundred years of research. The case for the shallow igneous rocks is not difficult to prove because the volcanoes of today produce this inequigranular rock. But granite and texturally similar rocks are a greater problem. No granite has been seen forming nor has it ever been made under any of the conditions capable of being produced in the laboratory. Yet no one seriously doubts that granite is a rock of deep seated origin.

One of the significant lines of observation dealing with this problem can be simply explained. If a liquid capable of crystallization is cooled slowly large crystals will form, but if the liquid is

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chilled very small crystals are produced. (Several other factors are involved but will not be considered for the sake of simplicity.) So if we find two rocks with identical mineralogical composition but different textures, it is probably safe to say that they solidified under different conditions. Assuming they both started to cool from about the same temperature then the rate of cooling probably was different. The rate of cooling depends primarily on the specific heat of a substance and the amount and efficiency of the insulation. Since the specific heat is the same in both instances its effect as a variable factor can be cancelled. The variable is then the insulation. In both cases the insulation is the overlying rock. The only way to change its effect is to have more of it by going deeper into the earth. Therefore one rock must have solidified at greater depth than the other. We know that inequigranular or fine grained rocks form at the surface so that means that granite-like rocks form at depth.

A problem may be difficult if not impossible for one man to solve from just simple observation with no aid of special pre-thought-out material from other sources. This is partly true in the case of the igneous rocks. The reading is difficult. It seems to be in a code and the key even today is not altogether satisfactory.

As a second example we can use a simple case. We will use samples whose meanings can be clearly seen without any special help other than common sense. The samples are two sedimentary rocks of marine origin. One is a gravel of sharp angular pebbles with a great variety in size (unsorted). The other is a fine grained sandstone composed nearly entirely of quartz.

Figure I will help in the discussion of these rocks. It illustrates a possible erosion cycle under normal conditions from extreme youth (stage 1) to old age (stage 4). Figure I shows that gravel is never deposited very far from land while sand has a much wider zone of deposition. Therefore the gravel sample was probably deposited near shore. The poor sorting of the gravel indicates a short distance of transportation. Small particles are moved more readily than large ones. So material which is moved by water any reasonable distance is sorted in transit. This statement is not the result of profound research but is based on observations of an irrigation ditch or material at the beach. To read effectively one must be able to transfer meaning from one situation to another and apply the meaning to the new situation. The shape of the pebbles also indicates a short distance of travel, because during transportation bouncing and rolling tends to gradually round a pebble. (The character of the rock is also a factor in the shaping process). For these reasons the gravel deposited at stage 4 would be smaller, rounded, and better sorted than the material in either stage 1 or 2. In all probability the gravel described was deposited under conditions similar to those of stage 1.

The sand deposited at stage 1 and 4 would be different. The size, shape and sorting might be the same but the mineral content would be

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different, (unless it was deposited near the polar regions). The resistant minerals would be concentrated at stage 4 because the less resistant ones would be destroyed by abrasion and weathering during long transportation.

The origin of the sandstone sample is not as clean cut as that of the gravel. It could have been deposited under conditions similar to those at stage 4 or it might be reworked material.

This short discussion of sedimentation suggests some further applications. The reasoning behind the maps of ancient seas hundreds of millions of years old extending over now mountainous areas is a mystery to the layman. A little careful reading of the rocks should make some of the evidence clear to everyone. Since gravels are usually deposited in shallow water a marine gravel bed would indicate a proximity to a coast. The rocks on the earth's surface often show a gradation from coarse to fine material. This is a strong evidence in determining direction of source on the one hand and of deep water on the other. All of which helps in establishing the coastline of an ancient sea.

The metamorphic rocks present more variety in form and more complex problems than either the igneous or sedimentary ones. This is readily understood when you consider all the possible igneous and sedimentary rocks metamorphosed in different ways to different degrees. The resultant variety is almost limitless. Reading and interpreting these rocks is more difficult than the rocks already discussed but the problem is also more intriguing.

These illustrations point out the fact that each rock has a meaning. A combination of rocks also has significance. The meaning of a sentence is determined by the arrangement of the words; changes in the arrangement often alter the meaning. Rock sequences behave in the same way.

The reading of rocks can be as sketchy or as thorough as you wish to make it. You may start with just a simple observation. The next time you add to it. Eventually you will be making many observations and deductions with no great effort. The process is simple and a source of endless pleasure and satisfaction in knowing your environment.

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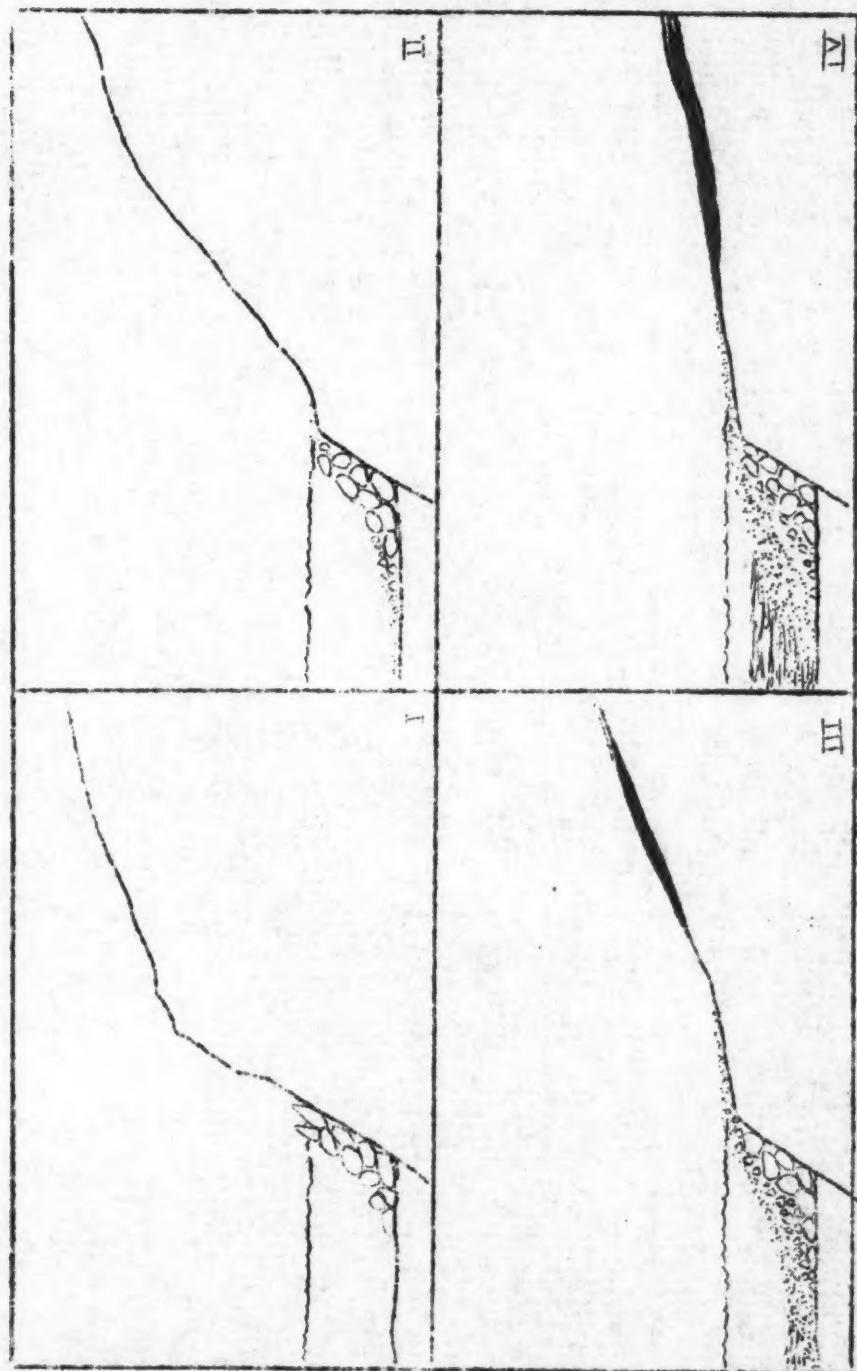


Figure I

IllustrationsReading the Rocks

Figure I. A possible cycle of erosion on an uplifted granite block in a warm humid climate.

Stage I. Large blocks break off and drop in the ocean, perhaps forming a bit of gravel.

Stage II. The ocean has cut more deeply into the block and weathering has smoothed the contours. A small beach is formed and gravel with some sand is deposited.

Stage III. The erosion of the block is mostly due to swiftly moving streams aided by weathering. Some soil (black) formed by weathering is accumulating on the slopes. The beach is wider and sandier. The deposits now are mostly sand and mud, the latter is deposited farther off shore.

Stage IV. The block has almost been worn down to sea level. It is covered with soil. Very little erosion is going on. The beach is broad and maybe slightly muddy. The deposits are now nearly all mud carried by slowly flowing river and deposited far out at sea.

## STORIES IN STONES

George Bellemain, Norton School and Claremont Colleges Summer Session

The pioneers of geology attempted to explain mountains and other geological features without understanding the units which make up the earth's crust. This was like trying to read books without understanding the words. The results were just about what could be expected.

The story of a mountain is a composite of the stories of each unit making up that mountain. If the fundamental concepts concerning the units of the mountain are incorrect it is quite likely that the final explanation of the mountain will also be incorrect. This does not mean that the whole explanation is worthless. Most of our modern theories are based on incomplete data. But the more observations are made, the greater is the chance that an accurate interpretation will result.

In spite of their handicaps some of the keener minds of the past made some truly remarkable observations on their environment. One of the outstanding early interpreters was a Dane, Niels Steensen. His name was latinized to Nicolas Steno. Steno was a court physician to the Grand Duke Ferdinand II in Florence. It was in about 1668 that he wrote his "Prodromus". Three of the many principles that he set forth in this famous early work were: A given stratum is always younger than the one below it, an exposed edge of a bed indicates a change in position, and a tilted stratum also indicates a change in position. These points seem very elementary and obvious but were not recognized for a long time. Now they are used every day by geologists but not as dogmatically as Steno proposed them. The points are fundamentally true, but in each case there are exceptions to the rule.

Figure I shows a sequence of rocks which have a story to tell to one able to read it. With the aid of some of the material already discussed, "Reading the Rocks", (and more) we can attempt to read this section. The first rock deposited was the sandstone; since it underlies one rock and is intruded by the other it must have been there first, therefore is the oldest. The mineral assemblage of this sandstone will be helpful in determining the conditions of deposition and possible sources of the sand. If large quantities of all the minerals of a normal granite are found, then granite was probably the source rock and the conditions of deposition were unfavorable for alteration. This could be explained in two ways: either the material was exposed to the elements for only a short time, or the climate was one in which little or no weathering takes place, such as in the Arctic regions. Rare minerals in the assemblage may help to trace the materials to its source if the minerals have been found in the region. The fossils (if any) are invaluable in deciphering such a sequence as will be pointed out later. The fossil content of the sediment will give the age and possibly the depth and temperature of the water.

The next event of which we have evidence was the intrusion by

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granite. Since this occurs only at great depth, the sandstone was probably well buried and sank after deposition. The intrusion of the granite caused a buckling of the sandstone and slight metamorphism at the contact. After that the area was uplifted above sea level and eroded. This is indicated by the rough uneven surface of the sandstone and also by the fact that the granite had to be covered by a great deal more than one thin bed of sandstone. The amount of material eroded away cannot be told from this section but it must have been several thousand feet because a great thickness was necessary to insulate and keep the granite from breaking through. After a period of erosion the lava flows occurred. The volcano that contributed the lava must have been a rather violent one to produce the ash. The number of beds of ash and lava, thickness and condition of each, and direction of flow will all help to draw a clear picture of the volcano. The two igneous rocks have to be dated by their relation to the sediment and each other. The granite is younger than the sandstone since it intruded and disturbed the sediment. However the lava was not affected by this disturbance, therefore it is younger than the granite.

All that we can say of the age of the igneous rocks from this section is that they are both post-sediment and that the lava is the younger of the two. An examination of the top soil will determine whether it was formed by the weathering of the lava or brought in from another area. Evidence from other sections in the region may fill the gaps in this history. With this brief exercise in reading one can readily see how volumes can be written on a sequence such as that exposed in the Grand Canyon.

A group of sentences makes a paragraph. These accumulate to make chapters, and finally we have a book. Groups of sections also add up to make a book, a book of the history of the area from which the sections were taken. The accuracy of the history, whether it is human or geologic, depends upon the completeness and reliability of the observations and their interpretations.

To make the observations complete we have to consider that fascinating branch of geology which deals with the life of the past. As mentioned at the beginning of this paper, fossils were correctly recognized a long time ago. But for about 1500 years after the birth of Christ few dared have any ideas concerning their true nature.

One of the first men to bring a light to the intellectual gloom of the dark ages was Leonardo da Vinci. He was a remarkable man who dabbled in all fields of human endeavor, just touching each one enough to be claimed as a pioneer in that field. He observed seashells in drainage canal cuts near Milan. This he correctly interpreted as evidence of seas covering the area at some time long past. These conclusions he confided to no one. Many years later when his notebooks were deciphered (they had been written in a code) the ideas were beyond the comprehension of the translator and were not understood. Now we appreciate them because we know enough to enable us to read his words and grasp his ideas.

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About 150 years later Steno also had something to offer on fossils. With his training as an anatomist he identified the remains of several animals and felt certain that they had once been parts of a living organism. Then there arose a conflict within himself. His observations and determinations did not agree with his religious views. So he discontinued his scientific labors.

Finally this controversy that had smouldered for years was discussed openly in the scientific societies of the world. Around 1750 fossils were accepted as remains of organisms; then new advancements were made.

The imperfect interpretations of the fossils were at first quite amusing. Today the reliable details that have been determined from fossil creatures such as the dinosaurs is no less amazing than the dinosaurs themselves. The more recently an animal lived the more is known about it. The life in the Los Angeles area 25,000 years ago is nearly as well known as is the life of today. Almost every type of organism is preserved in the Brea Pits from the delicate wing cover of an insect to a four foot femur of an elephant. Even something about their afflictions is known such as fused vertebrae, broken and healed ribs, arthritic joints, all of which is part of the story of these animals.

The hairy mammoth which once roamed over most of the earth, now extinct for 10,000 years, stands mounted in the original skin in the Leningrad Museum. The animal and its name both have an interesting history. The Tartar-Russian natives of Siberia were the first to find these animals, which were usually buried in ice or soil. From that observation the natives thought that these animals were giant moles burrowing in the ice and soil and so named them accordingly "mamantu". The name traveled to Petrograd, then to Paris, emerging as mammouth, later anglicized to mammoth, which today means more than a prehistoric elephant. The flesh of these animals is so well preserved by the ice that it is sometimes used as dog food. The contents of the mouth and stomach have yielded exact information as to their diet and many other facts have been established. Yet this was not done until someone able to observe and interpret well studied the problem as a whole. The life of the past presents easier and perhaps more interesting reading than the enclosing medium, the rocks, but it should not be considered separately any more than you would read only every other word in a book. The story at best is only partly complete when both are read together.

An analogy has been drawn between the alphabet and minerals, rocks and words, sentences and rock sequences. By stretching a point we can extend this analogy to include the surface of the earth. We may consider the surface as a cover of the book enclosing the stone pages of the history of the earth.

Scratched covers, mashed corners, or stains are evidences of the events in a book's life. Periods of great humidity or dryness, ice or

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vulcanism all leave their particular scar or scab on the earth. This scarred cover offers much reading matter.

The observation and interpretation of the earth's surface is a study in itself and is known as geomorphology. The roots of the word geo--earth, morpho--form, logy--science, practically define it. The geologist studies the exposed materials, projects them underground, and therefrom reconstructs the past. The geomorphologist is concerned primarily with the surface forms of the material, taking into consideration the character of the rocks which may influence or control the forms. From the surface he can reconstruct the immediate past of a region and sometimes even predict the future.

The preliminary work of a geomorphologist is the study of forms whose origins are known, such as ocean shore lines, glaciated regions or deserts. With these observations as tools he is ready to decipher the recent history of a region whose past is not obvious.

The casual observer driving across the Mojave Desert of California seldom suspects that this arid region once was dotted with many lakes and their connecting rivers. The area was then more habitable than it is today. Vegetation was more abundant, animals roamed the countryside, and Indians had camp sites along the lake shores.

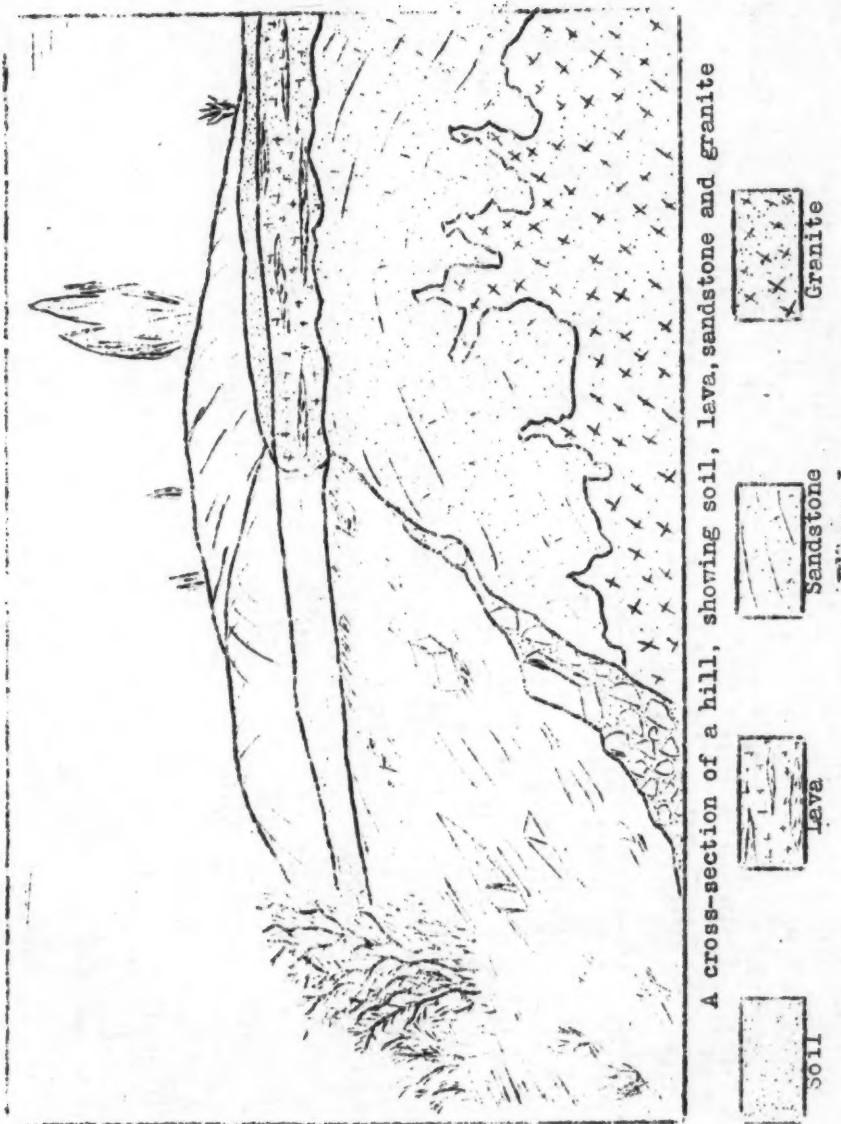
The evidence for these statements is fragmentary but sufficient. The fragments have to be pieced together, the gaps filled in, then the story appears.

First some notches were found on many of the mountain slopes encircling the great desert basins. Also, often around the edges of these basins were some gravel benches. Further work showed that they occurred at definite levels. These levels were extended around the basins and several successive lakes were established. Detailed study of the gravels and other features contributed more information concerning the age, geography, salinity, etc. Finally the archaeologists, using the geologist's data, studied likely sites on known beaches and found artifacts of an old culture. So knowledge grows; the more is read the more there is to read.

In deciphering the recent history of an area, all available facts should be considered. Even the distribution of animal life has proved useful. The history is then the best possible explanation that fits all the facts.

The interpretation of the printed word symbol depends on the reader. The same material does not reveal the same information to everyone. This is painfully true since no small part of today's literature is re-interpretation of old observations. Reading the earth presents the same problems, but it is more exciting and intriguing because you are making your own observations and forming your own opinions. The material is not second-hand as it has to be in a book; nor has it been tainted by the observations of another mind. The library of material is limitless. The only limit is your own ability to read.

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A cross-section of a hill, showing soil, lava, sandstone and granite



Figure I

## TYPES OF READING SITUATIONS IN THE UPPER GRADES

Leonard M. Christensen, Principal, Gustine Elementary School

### 1. Reading, A Junior High School Problem

As early as 1925 the Committee on Reading of the National Society for the Study of Education recognized the need for special instruction in reading in the upper grades and high schools and advocated remedial instruction to overcome the handicaps of retarded readers, in the following statement:

All junior high schools and most high schools have on their faculties one or more expert teachers qualified to give special training in habits of silent and oral reading. Inventories should be made at frequent intervals of the reading accomplishments and needs of pupils. All who fall noticeably below the sixth grade standards should be given instruction in reading during a special training period until a satisfactory level of accomplishment has been reached. Furthermore, all pupils who encounter unusual difficulties in reading should be referred to the special teacher for diagnosis and remedial treatment. Unless some such provision is made for correcting fundamental defects, there is grave danger that the difficulties which these pupils encounter will never be corrected, and that they will be seriously handicapped in all school activities that require reading.<sup>1</sup>

The last sentence of the above paragraph clearly indicates the need for definite reading instruction in the upper grades. From the present emphasis on remedial instruction in reading in our senior high schools, and the universal complaint of subject teachers that their pupils cannot read their texts, we realize the necessity of adjusting our present program to include a fundamental reading course. This course should not be remedial reading just for students below their reading grade, but rather a course in creating desirable reading habits and interests for all junior high school students. This program would develop the whole child, with reading as a center of interest.

### 2. Reading, A National Problem

The need for better reading habits and interest in finer literature is a national problem. A recent very interesting article pictures what is happening to America's reading habits.

It may sound a little stuffy but it is none the less true that the real threat to the permanency of our democratic system lies in the muddy-mindedness of the citizens. In a self-governing nation of 130 million heterogeneous people, among whom the suffrage is universal and unrestricted, that is no slight danger; and anything

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<sup>1</sup> McCallister, James A. Remedial and Corrective Instruction in Reading. New York: D. Appleton-Century Company, 1936, p.8

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that can be done to dispel the clouds of mental confusion and promote clarity of thought is a distinct national service. In brief, the higher the general intellectual level the greater the chance of survival.

Now if there is a more effective way to achieve these things than the cultivation of the popular taste for good reading, it has not been suggested. The fact is that the extent to which we are drenched with printed trash today is as bad a single symptom of our state as can be cited. It is not possible to deny that the bulk of the capital and energy of the publishing business is devoted to pandering to the lowest taste in reading; that instead of stimulating the public mentality, it calculatingly caters to cerebral lethargy and constantly deepens the swamp of ignorance in which so many of us seem irretrievably stuck.

Publishing competition has resulted in unrestrained exploitation of the mass tendency not to think. Newspapers have quadrupled the number of colored comics; the output of cheap crime fiction has doubled; constantly stimulated, it is found impossible to satisfy the public appetite for detective stories. Sports, Sex, Crime, and Comics—it is accurate to say that the great bulk of publishing is deliberately devoted to these four subjects on the simple theory that they are what the people want and the game is to give it to them.<sup>1</sup>

Little wonder that following the publishing of this report a torrent of "smutty magazines" has flooded America's newsstands, periodicals reeking with frankly objectional material. Our task as educators increases many times when thirteen-year old boys and girls have free access to cheap literature. We must develop a high standard of appreciation for better literature. Emphasis placed on reading efficiency in the junior high school will contribute to a positive degree the standards we seek.

J. Edgar Hoover speaks for every decent-minded citizen when he says: "There is no place for the filthy magazine. This trash must go."<sup>2</sup>

This vast market has been created by the inefficient non-thinking readers we are sending into the world.

Perhaps a more difficult way to stop this degrading material than Mr. Ryley Cooper suggests, is through the developing of the most critical reader and appreciator of fine literature than can be trained. This

1 Kent, F. R. "As a Nation Reads," Readers Digest, April 1938, 32(No.192) 113-138.

2 Cooper, Courtney, R. "This Trash Must Go!" Readers Digest, February, 1940, 36 (No. 214) 20-24

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can only be done by training students in the art of reading beyond the 6th grade.

Paul Witty in discussing reading for meaning, states that:

During the past decade, with increasing frequency one finds citation of the meager reading skills of the typical junior and senior high school student. Research results confirm the general observation that the pupils have not developed effective reading skills and habits, and that the mental hygiene of hordes of children has become impaired as they are forced to adapt themselves to learning (in effect memorizing) more and more unintelligible and meaningless materials.

Moreover, studies have proved that the typical adult obtained his knowledge of current problems almost solely from the local newspaper and radio. Further, he was woefully uninformed concerning sources of accurate printed information relating to social economic issues.

The result of the adult's simple habits, affects his whole recreational pattern. He is found to display an almost universal interest in listening to the radio, reading the newspapers, going to the cinema, playing bridge, motoring, and attending parties. Silent reading—our most significant avenue for growth and understanding--was low in the list of preferred recreations.<sup>1</sup>

To what source shall we trace the conditions of the reading habits of our nation? There are many causes; however, one alarming fact stands out clearly: the educative process has failed to develop effective reading habits and therefore engenders permanent reading interests.

### 3. Need for Increased Instruction in Reading

In the past and even at the present time we assume the belief that the child has mastered the fundamentals of reading when he has reached the seventh grade. Dr. Uhl of Washington University calls this "The Great American Fallacy" in his report in the National Society for the Study of Education, Thirty-sixth Yearbook Report of the Committee on Reading, Part I. It is truly a fallacy to imagine a child at the completion of his elementary education to be master of the following list of major purposes of work-type reading:

To acquire information

To draw conclusions

To form opinions

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<sup>1</sup> Witty, Paul A. "Reading for Meaning," English Journal, March, 1938  
27: 221-29.

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To find answers to questions or problems

To discover new problems

To evaluate materials

To acquire more effective modes of reasoning and thinking

To visualize details

In order to achieve these purposes, certain techniques are useful and indispensable in subject mastery:

1. Finding the central thought

2. Recognizing key words or sentences

3. Outlining

4. Summarizing

5. Determining general principles

6. Reviewing systematically

7. Interpreting by bringing other knowledge to bear upon the reading.

8. Reproducing in one's own language.

9. Skimming

10. Following directions.

Reading is not the passive reception of ideas, but rather it is an act requiring constant mental activity carefully directed.<sup>1</sup>

Yet during the past two decades reading has completely disappeared from the junior high school level; first, as a subject, then it has been slowly pushed out of the English courses in favor of formal grammar and the dissecting of the classics.

The amount of reading for successful school work increases rapidly as the child goes through the grade school. When he reaches the junior high school, a change is made from the single teacher training to departmental teaching and an increase in reading assignments of approximately 60 percent. In each subject new books are being used, and as Dr. John Hockett says, these books are fascinating in their make-up, content,

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<sup>1</sup> Center, S. S. and Persons, C. L. Teaching High School Students to Read. New York: D. Appleton Century Company, 1937, p. 18

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illustrations, and interest. There is, however, widespread complaint by the subject teachers that the students don't understand the books; students read the assignments but are without the ability to interpret skillfully what they have read; and they also lack the ability to skim, re-read, and outline assignments systematically.

4. Report of Reading Survey Conducted in the  
Berkeley Public Schools

"The need of reading in our school system is clearly shown as a result of a testing program conducted by the Bureau of Curriculum of the Berkeley Public Schools in January, 1937. The high fourth, high seventh, and low eleventh grades (English V classes) of the entire school system were tested with the Thorndike-McCall Reading Scale, Form I.<sup>1</sup> This program does not include vocational English classes. The complete results of the tests are shown to give a clear picture of their illuminating findings. Of three grades tested, the seventh grade results showed that 42 percent of the pupils were below their reading grade level, as shown in Table I. It is interesting to note on Table II that 61 percent of the high seventh grade students reading below their grade level have IQs of 95 or above. This would indicate the necessity of reading instruction beyond the sixth grade. In a recent letter to the writer, Stella Center stated that a threefold attack on reading in the junior high school would definitely improve the reading and would automatically decrease the teaching of elementary remedial reading in the senior high school. This threefold attack includes required reading as reading, a remedial reading clinic for students having reading deficiencies, and a reading program which would include for its basic philosophy the creating of a critical thinking mind through pleasant reading activities and not the remedial drill type reading as an end in itself. Reading could then be measured by "reflective type discussion and activity and not by the usual routine quizzing to find out if student has read assignments."<sup>2</sup>

In November 1938 the Thorndike-McCall Reading Tests were administered to the ninth grade students. Table III shows the results of the tests as scored in the three junior high schools. The percentage (40.1%) of students reading below the median shows the necessity of developing a reading program that would not only help the students reading below grade, but would also increase the reading efficiency of the entire junior high school population.

The real task is, of course, to help the large number of students scoring low on the standardized reading test. Increased emphasis upon

<sup>1</sup> Thorndike, B. and McCall, W. Reading Scale, Form I. (New York: Columbia University, 1922).

<sup>2</sup> Rosenblatt, L. M. "Readin'- Always Readin'" Educational Method, (December, 1939), 19 (No. 3), 134-141.

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TABLE I

SUMMARY OF READING SURVEY IN THE BERKELEY\*  
PUBLIC SCHOOLS FEBRUARY, 1937

Thorndike-McCall Reading Scale, Form 1, Given in  
Grades High 4, High 7, and Low 11  
(English V Classes)

	High 4	High 7	Low 11
Total Number of Students	5.01	256	559
Median Grade Score	5.4	7.7	13.3
Norm for Grade	4.5	7.7	11.7
Number Below Norm	105	240	57
Percent Below Norm	21	42	22

TABLE II

## INTELLIGENCE OF PUPILS BELOW NORM

	High 4	High 7	Low 11
Number of Pupils of 95 I.Q. and Above, Below Reading Norm	51	146	31
Per cent 95 I.Q. and Above	62	61	60

\* The complete data, from which Tables I and II above are derived, are attached in the Appendix.

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TABLE III  
 BERKELEY PUBLIC SCHOOLS  
 Bureau of Curriculum

THORNDIKE-McCALL READING TEST  
 Grade High Nine

November 1938

Crude Score	Grade Score	Age Score	Burbank	Garfield	Willard	Total
34	15.3	20.5	-	1	-	1
33	15.0	19.6	1	7	3	11
32	14.7	18.8	2	16	1	19
31	14.4	18.2	4	14	12	30
30	13.3	16.9	12	25	8	45
29	11.7	16.0	11	24	28	63
28	9.2	15.1	16	10	17	43 Med.
<hr/>						
27	8.3	14.6	12	8	8	28
26	7.7	14.1	16	9	10	35
25	7.2	13.7	9	5	8	22
24	6.8	13.2	9	2	9	20
23	6.5	12.7	5	1	7	13
22	6.1	12.3	1	2	5	8
21	5.8	11.8	5	-	1	6
20	5.4	11.3	1	-	2	3
19	5.1	10.8	3	-	2	5
18	4.7	10.3	-	-	1	1
17	4.5	10.1	-	-	-	-
16	4.2	9.7	-	-	-	-
15	4.0	9.4	-	-	1	1
			107	124	123	354*

\* The percentage of students reading below the median is 40.1 percent for all three schools.

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reading ability in high school and college is placing a major task upon the shoulders of America's youth. Their formative years should be used in developing to the best of their ability the fundamental skills essential to meet the increased demands of higher education. With a strong foundation in both efficient and thoughtful reading habits the students will profit in high school and college to a much larger degree and will actually appreciate the fine literature available.

#### 5. Types of Reading Situations in the Upper Grades

The organization of this first developmental reading class in the Willard Junior High School was the result of the complaints which subject teachers made regarding the poor reading ability of many pupils placed in their classroom.

The students selected were on the whole disciplinary problems, and all of them were boys. Their scholastic standing was low and their interest in school and school work was even lower. Their home background was mixed; that is, there were students from fine homes and some from poor homes. A few students scored low mentally and had been pushed through the grades as their chronological age increased. This group of boys was a challenge to their instructor, and the following paragraphs will reveal how the problem was attacked and solved.

The students for this class were selected chiefly by teacher judgment, after the semester had started. This plan, however, has been changed materially. The identification and selection of pupils for the class is based upon a series of reading tests, the judgment of classroom teachers, and on the report of the student's record by counselors.

The plan in teaching this class of boys, who were not only weak in their ability to read, but who were considered disciplinary problems as well, was to provide the following:

1. Creation of an incentive to improve in their ability to read the printed page.
2. Easy but interesting reading material.
3. Records for charting individual progress.
4. Providing interesting and varied classroom activities.
5. Integration of school work with industrial occupations.
6. Motivated drill for short periods of time in reading, English grammar, spelling, penmanship, and vocabulary development.
7. Adequate reading material for the students to read for pleasure and project work in the classroom.

8. Free reading periods with good storybooks available in the classroom.
9. Opportunities to develop character, through reading and discussion.
10. Rapport gained with pupil through individual interest in his problems.

How can a genuine incentive be created in pupils who have developed strong but poor reading habits and who dislike to read because of these poor habits? The class was tested in reading and the results were discussed intelligently with the pupils. The value and importance of being able to read in modern society were cited in the following ways:

1. College graduates have increased the amount of their reading 183.5 percent since 1920.<sup>1</sup>
2. Many college students depended upon third, fourth, and fifth grade reading ability to see them safely through college.
3. The volume of general publications has increased 170 percent since 1900.
4. There are over 2167 daily newspapers and 10,805 weekly papers in the United States.
5. Rapid communication has brought the average citizen into contact with the whole world.
6. Required reading by office executives and workers has increased 500 percent since 1900.
7. It is acknowledged that the ability to read effectively contributes to the success and happiness of the individual.

These were the key points in the class discussions the first few days of the new term. The students were enlightened as to the importance of being able to read efficiently in order to be successful in their high school work as well as to prepare for their life's work.

To develop further interest in the improvement of reading, the students were provided with interesting easy reading books. The books were kept by the teacher and were passed to the students with instructions to follow directions carefully. The directions given were:

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<sup>1</sup> "March of Education," News Letter No. 11, November 1936.  
Office of Education, Washington, D. C.

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1. To open books to first story.
2. To start reading story on the signal.
3. To mark the place when bell rings on interval timer set to ring at end of one minute.
4. To go on and finish story.
5. To answer questions about the story found in the back of the book.
6. To correct answers.
7. To count the number of words read in one minute.
8. To record the student's record on his chart.

After the first four or five stories, each pupil read and answered the questions at his own rate of reading.

The problem in the remedial reading class at the Willard Junior High School was to teach English and social studies and at the same time increase the students' reading efficiency, as the students who were selected for this class were from two to four years retarded in their reading grade. The following units were carried on in conjunction with the regular English and Social Science requirements: (1) letter writing activity; (2) field excursions; (3) basic reading program; (4) directed reading.

Formal drill work, provided for short periods of time, is one of the efficient ways to teach slow learning children, since students who are handicapped by poor reading habits usually have a short interest span. There is, however, one important point which must be kept in mind for the presentation of this type of lesson. Many teachers have experienced confusion and loss of time in changing units or activities during the period. This perplexing problem can be solved only by efficiency in planning on the part of the teacher. The material to be used for the next unit should always be on the student's desk before the unit is presented, and specific instructions should be brief.

In the beginning of the year the matter of efficiency should be carefully discussed with the class. Only by putting responsibility of being prepared on the shoulders of the students can efficient integration of reading and English be successfully conducted. In our experiment, in one semester three groups of students have moved from one room to another for both metronoscope reading and individual reading assignments, and the change has been effected without confusion and with no waste of time.

The typical daily schedule for the class in remedial reading is as follows: The students follow instructions for a short penmanship exer-

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cise, then the special lesson for the day is taken up: word study, grammar, social studies, etc. Following this, one of the planned units is presented by the teacher.

Letter Writing Unit. During the semester the interests of the students were discussed, and as a result of these talks more information about certain industries was needed. It was suggested that by writing letters we could obtain the information desired. Excursions were planned so that the students might see industry actually at work. Members of the class were taught the proper forms for business letters while actually writing to a commercial source furnishing educational information. The canning industry of California, for instance, was studied with genuine interest.

The following letters are samples of those which were written and received by the students and the instructor in the letter-writing activity.

Willard Junior High  
Berkeley, California  
August 29, 1938

California Packing Corporation  
101 California Street  
San Francisco, California

Dear Sir:

I am a student of Willard Junior High School. Our class is planning to visit one of your plants in Oakland. Before we go, however, we would like to know the canning industry better.

Would you please send us a copy of "A,B,C. of the Canning Industry." Any other information would be appreciated.

Thank you for your kind consideration of this letter.

Sincerely yours,

William Jurgensen

The answer was as follows:

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CALIFORNIA PACKING CORPORATION  
101 California Street  
San Francisco, California

September 2, 1938

Mr. William Jurgensen  
Willard Junior High School  
Berkeley, California

Dear Mr. Jurgensen:

We have your note requesting information on the canning industry, prior to your visiting our plant in Oakland.

Under separate cover we are mailing to you an assortment of informative material which we think will meet your requirements.

Thank you for the interest which prompted your writing to us for this material and it is our hope that you are benefited and interested in your visit to our plant.

Yours very truly,

CALIFORNIA PACKING CORPORATION  
Promotion Department

The letter writing unit offers educational opportunities little appreciated by many educators, although some are aware of its value. Dr. Butler of San Francisco State College remarked in one of his lectures that through the use of the letter writing unit functional grammar could be learned more thoroughly than by the traditional formal drill.

Field Excursions. The canning industry study led to a carefully planned visit to a modern packing plant. During the visit the following form was presented to the students. This form had been made following a previous visit to the plant by the teacher.

CALIFORNIA PACKING CORPORATION  
Emeryville, California      Plant Number 35  
Visited September 1, 1938

Directions: Observe and listen carefully before answering the questions.

1. What is the cannery canning? a\_\_\_\_\_ b\_\_\_\_\_.
2. The pears are delivered to the cannery (ripe or green?)\_\_\_\_\_.
3. Why are most of the pears kept in the ice house? \_\_\_\_\_.

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4. Ice house pears ripen in \_\_\_\_\_ days?
5. About \_\_\_\_\_ boxes of pears are canned in a season at Plant 35.
6. Why are pears graded? \_\_\_\_\_.
7. Girls cut on an average of \_\_\_\_\_ boxes of pears per day.
8. Are the broken pieces of pears wasted? (yes) \_\_\_\_\_ (no) \_\_\_\_\_.  
They are used for \_\_\_\_\_.
9. Name the brands of pears:
  - a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_
10. Are the pears and grapes carefully cleaned and handled? (yes) \_\_\_\_\_  
(no) \_\_\_\_\_.  
\_\_\_\_\_  
\_\_\_\_\_
11. Describe the process of canning fruit salad:  
\_\_\_\_\_  
\_\_\_\_\_
12. What future is there in being a seasonal worker in a cannery?  
Why? \_\_\_\_\_  
\_\_\_\_\_
13. What experience did you gain from this experiment?  
\_\_\_\_\_  
\_\_\_\_\_

Careful planning is the determining factor of success or failure in any school excursion. While visiting the various centers of interest and listening to the guide's remarks, the students carefully filled out the questionnaire. This gave the visit a purpose. They didn't walk aimlessly around and look, but rather they looked, thought, entered their data, and reached conclusions that enabled them to know the value of the various phases of the plant. After this visit the class had a new background of experience about which to write and talk.

The following letter was typical of those written by the class to the superintendent:

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Willard Junior High  
Berkeley, California  
September 6, 1938

Mr. Jerry Henry  
California Packing Corporation #35  
Emeryville, California

Dear Mr. Henry:

On Friday our class enjoyed the visit through your plant. We learned that,

1. the canning industry is exact science.
2. the cannery worker works very hard.
3. fine opportunities await young men who are educated.
4. over a million cases of fruit can be canned in a season.

On behalf of the class I thank you for your time in helping us to understand the workings of your cannery.

Sincerely yours,

William Jurgensen

The value and justification of the school excursion is beyond question when properly planned. The trip to the cannery was a wonderful aid in building interest in regular class work, self-control, and good conduct.

Basic Reading Unit. This unit was the nucleus of the program formulated for the instruction in remedial reading classes, and since it has been discussed quite fully in preceding pages, it will not be necessary to present further details here.

Directed Reading Unit. In this unit the students read short but interesting stories from a list suggested by the teacher. In addition they may choose other books from the school library or elsewhere which have the approval of the teacher. No formal book reports are required. As a usual procedure the teacher reads one short story to the class at the beginning of the period. This arouses the interest of the students who are not only anxious to read the story for themselves but wish also to find other stories of a similar nature. For instance, in one period the teacher read to the class a story about an octopus, and another was read on the metronoscope. Stories about this animal were then found in three other books, all of which the students desired to read. When the student realizes the wealth stored in books, he begins to seek some of the books which the teacher has mentioned in class. It is important to have the books within easy reach of the student so that

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he may not have a chance to lose interest. Paul A. Witty's list, found in the bibliography of this study, is recommended for the bookcase in the reading-English class.

The interesting point, educationally, was the effect of the plan in the classroom. During the semester, homework assignments were completed regularly; attention and application replaced the former confusion and lack of interest. As the plans were developed, every student in the class did his best to improve in both his reading ability and in his English. Disciplinary problems disappeared, and teaching was devoted entirely to the development of the students' potential ability in reading. The unit of study resulting from the class discussion mentioned is presented to show what was actually done. It must be remembered that throughout the entire study, reading was the core of the unit. By this is meant that the basic, work-type, and reading assignments were of major importance and only after completing these assignments were we able to plan and conduct our related activities.

The students who make up the remedial reading class are especially in need of sound training in personal development, and the remedial reading class may be a valuable aid to this end. This statement is made as a result of working with this type of student for the past five years. These students have developed defense mechanisms to cover their inability to keep up with their classmates. When they begin to experience success in their studies, character developing lessons fit appropriately into the teaching plan. Perhaps one of the most effective teaching aids in helping students in character development is the use of appropriate lessons taken from Personal Development by Dick Carlson.<sup>1</sup> The procedures suggested have been tried and found to produce results that are gratifying. The whole program, however, requires the teacher to be firm; at the same time he must have the respect of the students and must have infinite patience and sympathy with them.

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<sup>1</sup> Carlson, Dick. Personal Development. San Francisco: Personnel Research Bureau, 1933.

## THROUGH THE HAT AND OVER THE HEAD

A talk on Basic English  
and its relation to the new science of language

Charles W. Cooper, Ph.D., Professor of English, Whittier College

Friends, we are living in a time of change.<sup>1</sup> When I say this, B-1 for your plants, sulfa-\*this-and-that\* for disease and wounds, and flying warships, probably come to your mind. And these discoveries and inventions are, in a certain sense, representative of the new order of things. The works of Albert Einstein and P. W. Bridgeman have truly put old mother earth upside-down and inside-out and other-side-round--though to my own clouded view the earth is still solid and the grass is green!

Now, some of us see much the same sort of change taking place in the language field. Or it may be that our desire, like coloured glasses, makes us see signs of such a change. This new point of view is not, for the most part, to be seen in the English departments\* of our great universities. There, the history of language is still a part of the system--but without giving much thought to the way words have done their work. There, the history of letters is still the chief business--but without much questioning of the art-values and why one word is let into and another is kept out of that history. There, the details of verse form are worked over--but without giving much attention to the nature of the reading-experience. There, the laws of good writing are handed down by the authorities, and the unhappy wrong-doers are put under a system of punishments--but without "wasting" much time on how the meeting of two minds takes place and what things get in the way of clean-cut writing and clear-quick reading.

Do not get me wrong. I have myself come through the College of Letters and Science and the Graduate School of the University of California, and am conscious of the many values of my work there. And I have myself been teaching English in much the way I am, even now, crying down. But, I have become greatly troubled in the past few years about the condition of my business, which is English teaching. I am making the discovery that our young men and women have been learning the art of talking through the hat and over the head! And the fear is even now upon me that they have been doing this, in no small degree, because we have been talking through our hats and over their heads!!:

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<sup>1</sup> This talk, with some changes in detail, was first given at San Bernardino Valley Junior College on October 18, 1941, as part of a group of meetings on Basic English and Orthology.

\* The starred words in the written form of this talk may be of interest to the reader, but only when he comes to the second footnote.

I said that there are some signs of a change.

While teaching English 1a at Fresno State College the books of I. A. Richards and C. K. Ogden were mentioned. At the end of the first hour a young man said with a quiet laugh, "Have you seen Stuart Chase's new book, "The Tyranny of Words?" This response and my great interest in what Dr. Upton was doing and thinking at Whittier College, were steps in my becoming conscious of certain changes taking place in the language field.

Possibly you saw the reports, some time back, in the Los Angeles Times and in Coronet, of Dr. Upton's work with Basic English at Whittier College. Probably you took note of Dr. Richards' work with Basic as reported in the June 1941 Fortune and in Time (for July 15th of the same year) and of Dr. Richards' meetings in North Carolina in the past year about the use of Basic for making friends with Latin America. The New Testament in Basic English; the Orthological Committee and the Committee on Communications at Harvard University; Basic for teaching English to newcomers; Tilley's Basic English for College Freshmen; Wright and Brown's Reading Poems, a new Oxford Press book; Hugh R. Walpole's Semantics; the work at Groton School; the language interests of the progressive Education Association--all of these things are signs of the change! And all of them, in one way or another, are examples of that new science of language which has been named Orthology.\*

I may say a few words about another new development in the science of language, which goes by the name of "General Semantics." The word semantics\* is not a new one; it has long been used to name the science of meaning--the full sense of words. But "General Semantics", as used by Alfred Korzybski in Science and Sanity, is the name of a system of thought in which the new mathematics of Einstein and the new psychology since Freud are unhappily married (as I see it) by an unnatural hocus-pocus and mumbo-jumbo. There is more talking-about Science and Sanity than reading it. And some of those, like Stuart Chase and Wendell Johnson (of the University of Iowa), who make an attempt to give the chief points of the Korzybski system, are very free in saying that much of it is not at all clear to them, even after many readings of the work. At nearly every meeting of the Western Association of Teachers of Speech, there are discussions of "General Semantics," and some parts of the system have been put to use in colleges and universities.

Now, a reading of Wendell Johnson's Language and Speech Hygiene, which is printed for the Institute of General Semantics, will do two things: (1) it will give the reader a general knowledge of at least part of the system; and (2) it will give the reader some idea of the dangers that go hand in hand with it. A very complete and good short account of Korzybski's work, and what it has given to each of a number of sciences, is Professor Joseph C. Trainor's report, "The Contribution of Alfred Korzybski", in Psyche, vol. 16 (1926). Haykawa's Language in Action and Irving Lee's Language Habits in Human Affairs give the chief arguments of "General Semantics" in more detail. Each of them, in my

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opinion, is very good of its sort; they are simple and clear--and that is more than may be said for Science and Sanity. From my somewhat limited reading in the book, I would say that, within the mass of its 700 full pages, there are very many statements that are true and important. But Korzybski seems to me to do much talking through the hat, and certainly much talking over my head. Let me say at this time, then, that Korzybski, in certain places in his work, is writing about the same things as Ogden and Richards. And he takes his opening words from Ogden and Richards' The Meaning of Meaning, and he makes use of some of the ideas from their work.

It is chiefly of these two men, that I will be talking today.

After the last Great War, during a time when many old beliefs were being put away and many new discoveries were being made, these men, then young, were working together at Cambridge University. They put themselves to answering certain questions about language as used by the philosophers\*, those experts in the field of thought. Why, they asked, are there so many different opinions about what the philosophers say? In looking for their answers, C. K. Ogden and I. A. Richards not only made use of the older observations on language by Jeremy Bentham and others, but they also put that new science, psychology, to work. In fact, Dr. Richards' early training was in the field of psychology.

By the time they had The Meaning of Meaning ready for the printer in 1923, they had in hand the general outline for a new system of knowledge about how words do their work; about the different uses of the language-machine; about the structure of thought itself. And in the years since working together on this book, C. K. Ogden and I. A. Richards have, in a long list of writings, made an expansion and development of the system outlined in The Meaning of Meaning.

The invention of Basic English is the work of C. K. Ogden, and so are many of the books about Basic English. In addition to overseeing the business of the Orthological Institute, which has put out the long list of books in Basic English, Mr. Ogden has taken time to get together the very important list of books named The International Library of Psychology.

The work of I. A. Richards has been quite different. On the book-list which we have put together for you, you will see the names of some of his works: The Principles of Literary Criticism, Science and Poetry, Practical Criticism, The Philosophy of Rhetoric, Basic Rules of Reason, Interpretation in Teaching, and How to Read a Page.

Although I will be talking chiefly about the work of these two men, keep in mind that many persons have been working with them, both in England and in America. And, without doubt, many additions will be made to the books about Orthology in the coming years. Hugh R. Walpole's Semantics, the Nature of Words and Their Meanings, printed early in

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1941, is an attempt to make certain parts of Orthology clear to the general reader. Albert Upton's Design for Thinking, at the present time only privately printed for use at Whittier College, will, it seems to me, give a much fuller view of the whole picture when it is complete. It is to be regretted that Ogden and Richards have not themselves put out a simple and clear statement of their system of thought about language, which is still to be got-at only by working through many different books, some of them quite hard reading.

The purpose of this talk is to give you an over-view of Orthology, the new science of the right use of language, and of Basic English. Orthology is one of the sciences of language. It is the science of our language behaviour, of the way we make use of words--and sometimes let them make use of us. Orthology is not so much interested in the history of the language; or in the way in which English words have slowly given up their endings; or in the sounds used in forming words; or in the sorting out and recording of the senses in which words are used; or in the uncommon birth and strange history of special words; or in the "laws of good writing" put out by the "school men", or the "trade secrets" put out by the "best writers"! It is not philology, morphology, phonology or phonetics, lexicography, etymology, grammar or rhetoric\*, in their more common sense. These and other language sciences, going by their own long names, have their own special uses and values. Orthology, as the new science of language behaviour, is different from all of them. But Orthology will have something to say that will be of help to each of them before it is done. For Orthology is not only a science; but like the other sciences, it gives one a point of view. Let me state a few of its chief ideas:

First, that language has three quite different uses: communication\*, problem-solving\*, and emotional adjustment\*.

Most of the talking that one does is for the purpose of giving one's thoughts to other persons. This is the first part of the process of communication. It has been the general belief that, if one is serious, his thought will get across all right from his mind to his hearer's. This, however, is far from true. The complete meeting of minds, full communication without error, the process of making another person conscious of the delicate shade of thought of which one is himself conscious, this is, in fact, so far from the common experience that one is somewhat surprised when his hearers have fully and completely got the point! Orthology has much to say as to why we all have these troubles in the process of communication, for it goes deeply into the question of our language behaviour.

But language has a second important use. It is a machine with which we may get ourselves out of certain tight places; with which we may get control over certain of the things about us; with which we may put our thoughts in order and to rights. This second use of language is problem-solving. The experts in this field, the philosophers, haven't done very well here; they have let the machine get the best of them.

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The men of science have done much better; they have made use of the language machine to put their experiences in order, and to give names to these experiences, and to make lists of them, and to keep note of them in words, and to send their notes to other workers, and so on. It is through language that the new sciences of society and government and business have done their work. By giving one more complete control of language, Orthology is of help to us in putting our thoughts in order.

Language is used in a third way when we give our boy a good talking to; or when we let off steam on the disgusting condition of Man; or when we give way generally to our feelings, our hopes and fears, our desires and regrets; or when we put our thoughts into verse or into beautiful word-pictures. Language used in this way is an important sort of behaviour, and is one of the chief ways we have of putting our feelings in order. There has been much talk in modern psychology about the adjustment of a person to the things about him, and about a person's getting all of his interests into balance.

When all by yourself on a winter night, you take up a book of verse by the fire; or when with the troubles of this earth crushing in upon you, you take pen and put your sad feelings into words, you are making use of language for what is here named emotional adjustment. And by ten-thirty or eleven that night you are again at peace with yourself, and your different and opposite interests are again in balance. In this field of language as art, Orthology has at least let open the door.

Language, then, has these three quite different uses: communication, problem-solving, and emotional adjustment. Let me now go on to a second general question: how language does its work.

Language is made up of word-signs or symbols\*. These symbols are of two sorts: special sounds made by the voice and special designs of ink (printed or hand-written) upon paper. Something of a relation has been set up by man between these two sorts of symbols. Now the different symbols are representative of different things. But "the word is not the thing" (as Korzybski says over and over again, as though that statement itself had some secret power.) And more important, because more likely to be overlooked, there is no connection between the symbol and the thing of which it is representative—that is, no straight and true connection. The only connection between the word and the thing is through the mind of man, not Man in general but John Doe. This fact of the very uncertain relation of words to things is at the very base of Orthology, and is the most important discovery of Ogden and Richards. But it is so simple and clear, you say, that it is foolish to make so much of it. My answer is that it is simple enough, and my hope is that I have made it clear. But the worst of it is that we—you and you and I and John Doe—have been doing business so long under a different system of beliefs about language that, even when we get the point of this very special relation of words to things, we go happily on our way without taking it into account!

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Symbols, then, have meaning only in a context.\* That is, it is the conditions round about the word that make it say something. And there are two ways in which a word gets into a context (or matrix\* as Dr. Upton has reason for naming it). When you are talking you are putting words to use in a context. Each word and group of words has a certain relation to the past experience of the person using them. These conditions and relations are truly a very complex design. Our experience is not made up of separate things and facts, but of these complex groups of things. When at a meeting of a small society, I say, "Let's make Bill president," it is the whole picture that gives meaning to what is said: the Bill in question--president of what--and who will do the making--and how.

Words are put into a context not only by the person talking but also by the hearer. The wrong Bill, hearing the words, gets the idea that they'll make him president of the society; or the right Bill (his eyes at that minute upon a picture of Roosevelt) sees himself walking into the White House. It is only in so far as the context of saying is somewhat like the context of hearing that communication takes place.

Orthology, then, has given us certain knowledge of the way language does its work. But it is so hard to put this knowledge into everyday operation! For such a long time, we have got the word and the thing of which it is representative all mixed up in our minds. It is not certain words that are dirty or bad, as we are used to feeling; it is the thoughts of which they are but the signs, or the things the thoughts are of, that may be open to question. And helping the person who is out of adjustment at this point is one of the businesses of psychology. Turning to another example: we have gone down on our knees to the word "democracy"\*\* (as though the word had some secret power), in place of giving our respects to the things that our thoughts are of when we make use of the word "democracy". By making clear this word-thought-thing relation, and by putting forward the Theory of Context, Orthology has made it possible to come at misunderstanding\* and false interpretation\* with some system.

Misunderstanding is not getting the point of what is said, not getting the right point. If what is said "simply don't make sense nohow," the hearer is awake to the fact that "communication" hasn't taken place. But if what is said is "Clear enough!" or worse still, "Quite what I've said all the while!" or "My thought to a T!"--and if it was the purpose of the person talking to give his hearer a very different thought--then there may be very great danger, because both persons may have the completely false belief that true communication has taken place! (I am certain that you keep saying to yourselves, "Of course, of course! Let's get on to something new and important." But this is important, and giving serious attention to this question is new.) Interpretation, in this connection, is the art and science of getting at the true meaning (the full sense, feeling, and purpose) of symbols.

An ambiguity\* is a saying that may be taken in either of two ways--or in any one of several ways. Shakespeare, Milton, Wordsworth, and the

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other great men of letters have been expert in the use of this two-headed language. And something of the special effect of their great work comes from their use and control of ambiguity. Now, the reader, no less than the hearer, will have to be awake at the wheel, so as to make the right turns of thought and, in this way, keep to the road. It takes a very good driver to make his way through some of Browning's verse, as those of us may well say who have gone off the road at one of his sharp turns of thought. The fact that language signs may be taken in any one of two or three ways, the fact that the driver will have to keep from turning down the wrong side roads and will have to be awake to all the road signs--this ambiguity of language seems to be one of the most important language questions.

But I must go on to two or three other points about our language behaviour. I said that symbols have meaning only in a context—or to put it in another way: words only have something to say when they are put to use, either by a person writing (or talking) or by a person reading (or hearing). Now this meaning, this something that the words have to say, is more than simply the sense. There are in fact four or five different parts to a full meaning, only one of which is the sense of what is said. When, after marking a group of papers, I go into my schoolroom and say half-seriously, "Well, anyway, you're all good looking!"—there will not be more than three or four who do not get my full meaning. The context—the relation of the persons, the place, and the things round about to each other and to what has gone before; the hearers' knowledge that I am likely to make light of their short-comings; their past experience with the words "well, anyway" and "good-looking" and with special qualities of sound as signs—this complex design of past and present experiences, different for each person in the room, is put to use and gives colour to the meaning for each one. That no one has beauty as well as brains is (true or false) a common belief; and all the persons in that schoolroom will see that, by freely giving them the one quality, I am keeping back the other. And no feelings will be seriously wounded, for my voice will not be truly angry; but they will all get the point that, in my judgment, their papers were very poor. My point for you, however, is that my purpose and my feelings were even more important than the sense of my words; and that meaning is a very complex thing.

There is one trick of words that is specially important in Orthology, and that is metaphor\*, here used for naming, not one of the ornaments of verse, but the living structure of language itself. We are used to talking about "the leg of a table" and "a branch bank," overlooking the fact that each of these sayings is a metaphor. The wood supports which keep the table top from falling down, are somewhat like my own supports, my legs. The small bank has something of the same relation to the large bank as a branch has to the stem of a tree. The structure of a metaphor is, in some ways, simple enough. It is the comparison of one thing to a second one for the purpose of making clear some special fact about the first. The statement which is being made in this roundabout way may be named the tenor,\* that is, the chief thing the thought is of; and the other thing

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used for purpose of making this special statement may be named the vehicle,\* truly the carriage in which this statement is riding. There is not time now to say more about metaphor. The interested person will go to Dr. Richards' Bryn Mawr talks, The Philosophy of Rhetoric, and to his Interpretation in Teaching, for new and important thoughts on this special question.

And I will, of need, say only a word or two of another important fact about the way language does its work: abstraction.\* In fact, I am quite certain that I am not ready to give a straight-forward account of this most important part of our language behaviour, of which the new science of language has had much to say. The Mind of Man has the power to have general thoughts and to make general statements about groups of like experiences--and then to have still more general thoughts and to make still more general statements about these other general thoughts and statements--and still still more general statements about these still more general statements about these general statements--and so on--lifting itself by its own boots (as you might say), walking on air in the footsteps of the philosophers. When I say something about "swimming", I may be making a general statement based upon certain ones or all of my swimming experiences: my memory of the cold shock of Huntington Lake on last Labor Day; of fighting the waves at Laguna Beach some years back; of seeing some boys playing on the sand and in the sea at Balboa; and of reading about Halliburton's bathing in the waters of the Taj Mahal. Then I may have a more general thought about "sport"--swimming, basketball, running, and table sports. And I may go on to a still more general thought about "the physical programme of the Y.M.C.A.," based upon my more general thoughts of healthy sport, the development of boys as they are becoming men, the well-rounded person, and so on.

The many levels of abstraction outlined by Kerzybski are a help in this connection, and he is right in his belief that many persons get mixed up when doing business with thoughts and statements of the more general sort. And when I said, so freely, that the Mind of Man had this strange power, I am certain that you said to yourselves: "That is a high order abstraction, and if I am not awake to the dangers, I will be taken-in by some talking-through-the-hat."

You may now very naturally put this question to me about Orthology: "Of what use is it in our every day living?" And I make no attempt to give a complete answer, though I have given some suggestions by the way. But, before going on, I may say a word about Orthology as an instrument for keeping us safe from propaganda and business advertisements, which are much the same thing. If there was only a more general knowledge of the way words do their work; of the important place of purpose and feeling in the full meaning; of the fact that words have no meaning at all but in a context, and that the word is not the thing but only a symbol of it; of the dangers that go hand in hand with abstraction! If we all had this knowledge and, more important, if we all put it to use in our day by day and hour by hour living, there would be less danger to us as a nation in the times to come--times that will be full of troubles

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for us as a nation; times in which all sorts of adjustments will have to be made. And if we become orthologically strong, we may even be able to keep our fighting positions against the heavy attacks of Chevrolet, Calvert's Whiskey, Camels, and Crisco!

It is not possible to do more in this talk than give some of the main points of the system of thought and the point of view which go by the name of Orthology. I have made an attempt to do this, and will go on now to the other part of my talk: Basic English.

While Ogden and Richards were at work on The Meaning of Meaning, they had need of a special sort of language: a language of definition\*, a small group of words limited (for their use) to certain senses. If they were not to be taken in the act of talking-through-their-hats like the other philosophers, they would have to keep down to earth and make their word-signs have a clear relation to experience. One discovery that they made was that they kept using the same words over and over again in making clear to themselves the senses of those words that gave them most trouble. They became somewhat dependent upon this language of definition. In the next years Mr. Ogden came upon the discovery that one may get on very well without most of the verbs,\* as we're used to naming them. Then came the work of making the Basic word-list by a special system of selection. For some years the new language was put to use in many ways, by many different persons, in many fields of work; and necessary changes were made in the list. In 1930 Basic English was made public. Within twelve years, quite a number of books have been printed in this new form of English; it has put Esperanto to flight; it has been put into some of the schools of China and India, and is being made ready for use in South America; it now has a place in several schools and colleges in the United States, and in the teaching of English to newcomers to America.

What, then, is this thing, Basic English? What are its possible uses? What is its relation to Orthology, that new science of language of which I have been talking?

Basic English is a selection of 850 words (and certain words formed from them) in which it is possible to give the sense of almost anything one may have in mind. In addition to the 850 words, there is a special group of 100 words for use in each of the great general fields of knowledge, and 50 words more for each of the more highly special fields. For the chemist, then, there are 1000 words; for the engineer, 1000 words; for the writer of history, 1000 words; and so on. But they all have the 850 in common, and the special words of each may be made clear to the others with these common words. Then there are, in addition, 100 more words that are even now in general international use. (East and West, North and South, persons are going places in automobiles; they are using telephones and smoking cigarettes.) And last among these Basic words are the names of the days of the week, months of the year, and the common number words in their regular English forms. But, even

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with these additions, the Basic English list has little more than 1000 words. The heart of the list and rules for their use are commonly printed on one side of a sheet of notepaper!

Complete English, in comparison, is made up of some 500,000 different words, as recorded in the great Oxford Dictionary. Certain writers make use of 50,000 words. Some of our greatest men of letters have done their work with only 5,000. Basic English is a selection of only 1,000 with which one may give the sense of anything which is said in the 500,000.

So you put the question: How is it done? What is the trick?

The answer is in learning to get on without verbs, in the regular sense. In Basic English some 14 operations have names: do and make (the most general operations); go and come; get, take, have, and keep; let, give, put, and send; say and see. Then there are those four other words so important in making statements: be and seem, may and will. A second group of words are the names of the simple directions; up and down, to and from, in and out, off and on, over and under, after and before, and so on--22 in all. These Basic operation-words and direction-words, when used with the right thing-words, take the place of the thousands of verbs in complete English.

He disembarked is in Basic: He got off the boat.

He absconded with the money in Basic is: He made off (got away) with the money.

He vociferated becomes: He said very loudly (with great outcry)

He interposed may be: He came between them (or got in a word edge-ways)

He talked for an hour might be: His talk went on and on (or he was talking for an hour)

One of the secrets of writing Basic English is in learning the Basic way of doing without the thousands of verbs.

Most of the Basic list, however, is made up of 600 names of things. Two hundred of them may be pictured; among these are cat, dog, horse, and cow (of course); orange, apple, egg, and cheese; head, arm, leg, and foot; plough, spade, engine, and wheel. These are all common things, for which pictures may be made. Then there are 400 names for more general things: animal, fruit and food, body, and part, instrument and machine. This list of the 400 more general thing-words is always a surprise to me; it has in it so many of the words with which we do business each day: statement, suggestion, doubt, discussion, friend, even love, kiss, error, and regret. Most of these thing-words take -er, -ing, and -ed.

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endings as in complete English: the play "Hamlet," the player Gielgud, playing the part first played by Burbage.

Then there are the 150 words that name the qualities of things: long, short; happy, sad; quick, slow; red, green; living, dead; bitter, sweet, and so on. These quality-words take the -ly ending as in complete English: wise, wisely.

A second secret of writing Basic is in learning how to put the thing-words and quality-words together in such a way as to give names to more complex things and ideas. In Basic, a person will say male-cow (as many for shame do anyway), and you will say camera man (for photographer), peacemaker (which always gives pleasure to the pacifist). An iconoclast will have to be a person smashing false pictures or ideas; a municipality will be a town with self-government; a publication will be a book or a newspaper; a magazine will be a paper that comes out once a week, or a place for keeping gunpowder; adolescence is the change from boy to man. It is necessary to give close attention to "the thing the thought is of" in order to get at the Basic way of naming it.

A third secret of writing Basic is in the use of living metaphors. If a person has a great store of common experience, he will be able, like the Hebrew teachers of long ago and like Shakespeare and Lincoln, to put his most valued thoughts in the common language of everyday men. By using a simple story, by giving examples, by naming parallel experiences, by the suggestion of strange connections between things, he will take his thoughts right into the minds--yes, into the very hearts of his hearers. "You are the salt of the earth" . . . "food for powder, food for powder" . . . "changing horses in the middle of a stream."--Only in Basic you'd have to say small river.

(Is there any one of you in this room, who, by now, is not conscious that I have been talking to you for forty minutes in Basic English? To the 850 words I have made about 25 additions, for the most part words like meaning and context which would be a part of the special list for use in talking about the science of language. It was my hope that what I had to say might take your minds off the language itself so that, if you did become conscious of the strangely simple design of my words, you would not keep your attention upon it. But now that we are about to take up the possible uses of Basic, you may as well see it at work.) 1

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1 In addition to the words listed in The Basic Words, these words have been used: orthology, semantics, meaning, philosophy (and -er), communication, problem-solving, emotional (adjustment) symbol, context, matrix, misunderstanding, interpretation, ambiguity, metaphor, tenor, vehicle, abstraction, definition, department, verb, stream, democracy. But the sense of most of them was made clear when they were first used. The words philology, morphology, phonology, phonetics, lexicography, etymology, grammar, and rhetoric were used in outlining the sciences of language. Sulfa-, hocus-pocus, and mumbo-jumbo were used for special purposes. The words not in the Basic list have been starred (when first used in the written form of this talk).

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What, then, are the uses and the values of Basic English?

The first of these is as an international tongue. With the growth of trade in the past hundred years, man has become more conscious of how hard it is for persons in one country to do business with those in other countries. At every turn, the expert in two or three languages has been needed as a go-between. In addition, it became the thought of many persons that true peace on earth would come only when men of different nations might say their say to each other in a common language.

Now, there are four different kinds of international language: First, the sort of language whose natural development among traders has come about to meet a quick need. "Pidgin English" in the Far East and the "lingua franca" in the Mediterranean are and were of this sort. Second, the complete language of one nation which is forced upon persons of other nations in one way or another for one purpose or another: Church Latin and Law French of the Middle Ages, the French of taste and learning of the Late Renaissance, the German of Modern science, English as the language of government in the British Colonies. A third kind of international tongue is, like Esperanto, a consciously man-made language. Unlike those named above, Esperanto and Ido and Novial and Occidental are all the outgrowth of theory; no one of them is a natural development. Even if there was to be general agreement that Esperanto (or one of the others) is true and right in theory, it would still have to be said that, after some forty years, there are probably less than 100,000 persons in all parts of the earth and upon the seven seas who are able to say anything at all in it.

Basic English is a fourth kind of international tongue. It is unlike "pidgin English" and the "lingua franca" in so far as it is a more complete and regular language with a written form; and in it one may make statements about complex things and thoughts. It is unlike Church Latin, Law French, and English of the Empire, because it is simple in form and may be learned by strangers in two or three weeks. It is unlike Esperanto in that it is at heart a natural language, for it is based upon complete English. Now, there are about 500,000,000 persons (one quarter of the earth's beings!) who are able to use complete English or for whom it is even now a second tongue or the language of government. For them (and for you) the process of hearing and reading Basic is in no sense different from the process of hearing or reading complete English, as this talk may have made clear. And talking and writing Basic is (within the limits of the word-list and the small number of rules) quite the same as talking and writing complete English. For those other persons, however, who have no knowledge of complete English, Basic may be learned in two or three weeks. With phonograph records giving the sounds of all the words and the music of the English way of talking, and with the Basic list of words pinned up on the wall, and with A First Book of English for Chinese Learners (if one is a Chinese), Basic English will not be hard at all.

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You may have seen something about the interest of our State Department in the use of Basic English in Latin America as a way forward in making international friends. If the hope of the State Department is to give the people of South America a second-tongue, then we will all say, "Well and good!" For I am certain that no thoughtful person has any desire to have Basic English take the place of any nation's natural tongue, and to do away with Spanish, Portuguese, or complete English.

But let me go on to a second use of Basic: as a way of learning complete English. At the present time, some use is made of Basic in teaching newcomers to America their new tongue. Some experts in education have seen the value of Basic for teaching our language to very young boys and girls in our public schools. Certainly the use of Basic in other lands will be a first step in the direction of learning more complete English, for the user of Basic will naturally make additions to his store of thing-words and quality-words, and, hearing other persons talking will give him new and more complex ways of saying things that, though they may not be so clear, will give the user certain feelings of power or pleasure. And this second use of Basic, as a way of learning the control of complete English, is a part of the purpose for using it at Whittier College. For however expert in the use of language our young men and women are when they come to us, they most certainly make additions to their knowledge of and power over complete English while working with Basic in Dr. Upton's Freshman Significs.

There is a third use of Basic: as an instrument of thought. In some ways this is the most important. Keep in mind that Ogden and Richards had need of a language for definition while working together on The Meaning of Meaning. And many persons have had the feeling that there would be a smaller number of philosophers in Clouducukooland and more of them walking about (and being read!) on this earth if they had been conscious of the same need for clear and ordered language. But we are not all philosophers--and still we have need of greater control of language. Early in this talk I made the point that we all do much talking through our hats! We let our tongues go out for play, while our minds are off for a sleep! Now the day by day use of Basic English may be a special training of the mind, keeping it awake, forcing its attention upon "the thing the thought is of!"

It is to be noted with regret that the languages other than English are all but gone from our system of education. First Greek was put out of the way; then Latin; and (at the time of the last Great War) German was largely given up. Even French is to be seen in only some of our high schools. Spanish (because it is said to be less hard, and because we are close to Mexico) still has a place. But certainly the learning of a second and third tongue is not now said to be necessary, as it was at one time. And the loss has been very great, and of a sort not looked for. For in the process of learning another tongue, young men and women were getting a better control of their own tongue. Their experience in turning French into English and English into French was forcing their attention upon the thoughts of which the words were but signs, and the

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things that the thoughts were of. And there came a time for each of us when, in place of stepping from one French word to the next (by way of the word-list at the end of the book!), we suddenly got the point, the full thought flaming before us, and with English words jumping up to give it form! Not many young persons have this experience in our schools today. And this may be one reason why the word comes to have such authority with them, and the thought so little.

Now Basic English may be used to get back some of the values which went out the window with the bath. Unlike the learning of a strange tongue, wherein a year or two of hard work are necessary before the new language is of much profit in this way, the learning of Basic is so simple for us in this country that it is of value from the start. From the word "go," it may be an instrument for getting at the thought of a hard bit of prose. As each word in Basic is limited to the two or three senses noted in The Basic Words, this special language becomes a sharp knife (as at the biology work-table) for pointing out the relation of bone to muscle, and of muscle to nerve in the body of our language. It is not possible to put another man's words into Basic without giving attention to his thought and to the things his thoughts are of. And in this way one may get control of that ambiguity which is so naturally a part of our language and which it is so important to get within one's grip.

But Basic English may be an instrument of thought in still another way, and happy will be the day when the men of philosophy and psychology and the sciences of society, government, and money make some use of this language of self-control. Even a very limited experience in the use of Basic has made me see its value to the writer whose desire it is to be clear in his own thought. Not that one would take to writing Basic at all times in place of complete English--far from it! But that, when working out complex relations among ideas that are difficult to keep in mind, then Basic may come to one's help and give one a new sense of power!

In these ways Basic English becomes one of the chief instruments of Orthology, this new and certainly much-needed science of language. Together their use may be of help in keeping us from talking through the hat and over the head! My hope is that I have not done so!

A Classified, Critical Bibliography  
on Orthology and Basic English  
 (with a few items on General Semantics)

Prepared by Charles W. Cooper and Albert W. Upton, Whittier College

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## THE MUSIC OF LATIN AMERICA

Louis Woodson Curtis, Supervisor of Music, Los Angeles City Schools

Since the major portion of the program to be devoted to the music of Latin America is to consist of motion pictures of Mexico, Guatemala, and several of the South American republics, the showing of which is to be embellished by phonograph recordings of music typical of those countries, this paper will limit itself to a brief description of the South American Mission in which the speaker was engaged last summer, and some general remarks on the music of the countries included in his assignment in connection with that mission.

### The Music Education Mission of 1941

The educational world is well aware of the effort our government has been making in recent years to promote friendship and understanding between the people of the United States and the people of the Latin American republics. Among the various agencies that have participated in this "good neighbor" program, the most important are the Department of State, the Pan American Union and the Office of the Coordinator of Inter-American Affairs. This latter agency, which has, as its chief, Mr. Nelson Rockefeller was established by President Roosevelt in 1940, as a defense measure and because of its defense implications has had adequate funds with which to carry on its extensive programs of activities. The enterprises undertaken by the Coordinator's Office have involved many fields of endeavor, economic, and cultural. In the actual prosecution of these enterprises the Coordinator's office frequently has the interested support and active assistance of other agencies such as the Department of State and the Pan American Union. This was true in the case of the Music Education Mission, the actual details of which were planned by the Pan American Union, while the Cultural Division of the Department of State was helpful in such aspects of the mission as required diplomatic or consular attention in the countries visited.

Musical projects sponsored and either partially or completely financed by the Coordinator's Committee have included in addition to the music education mission such important and successful enterprises as the tours of the Yale University Glee Club, the American Ballet, and the American Woodwind Quintet. Of great significance also were the trips made in the summer of 1940 by Carleton Sprague Smith, Chief of the Music Division of the New York Public Library, and Marshall Bartholomew of Yale University. These distinguished musicians, travelling independently of each other, were sent to practically all of the South American republics for the purpose of making a survey of musical conditions on the southern continent. Upon their return to the United States, Messrs. Smith and Bartholomew reported to the Washington authorities that, while the musical life of South America lacked some of the richness that characterizes the musical life of the United States, there was nevertheless, a surprising amount of authentic professional musical activity to be found in most of the republics visited. That is to say

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the orchestral, operatic, and concert fields showed an unanticipated vitality, while almost every country could boast composers of genuine creative ability and, in some instances, composers of notable achievement. Messrs. Smith and Bartholomew, however, reported that, while the professional musical life of South America was reasonably active, very little was being done in the field of school music, and they therefore suggested that if the United States was to pursue further the musical possibilities of the good neighbor policy, music education would be one of the most profitable fields in which to engage. Acting on the recommendation of these gentlemen, the Coordinator's Committee and the Pan American Union jointly organized the 1941 South American Mission in Music Education.

Assigned to this mission were John W. Beattie, Dean of the School of Music of Northwestern University and Louis Woodson Curtis, Director of Music of the Los Angeles City Schools. The mission's itinerary included the republics of Colombia, Ecuador, Peru, Chile, Argentina, Uruguay and Brazil. The objectives of the mission were five-fold, viz. (1) through school visitation to determine the status of music education in each of the seven countries included in the assignment, (2) on the basis of this investigation to recommend to Washington a future program of inter-American activities in the field of school music, (3) to demonstrate to South American teachers, school administrators, public officials, professional musicians and others, by means of motion pictures and phonograph recordings, the music education program that has been developed in the schools of the United States, (4) to distribute to South American teacher-training institutions music education materials that had been proven successful in North American schools, (5) to collect South American folk and art music for use in the schools of the United States.

These five objectives were as fully realized as time and travel conditions could permit. The demonstration of school music activities in the United States by means of films and recordings was the most fruitful of all the activities included in the mission, since in five of the seven countries the pictures and recordings were presented to thousands of school children in addition to adult audiences. Both children and adults, thereby not only perceived the possibilities of a well organized program of school music, but also gained new and wholesome impressions of North American youth.

A valuable by-product of the trip was the series of motion pictures taken in South America, for showing to school groups in this country. These films not only include spots of scenic beauty but show also both urban and rural life, musical activities and educational institutions. The showing of these pictures constitutes the principal feature of this present presentation.

Some General Remarks on the Music of Latin America

The term "Latin American Music" is a misnomer. There is no unified pattern of musical expression among the peoples of Latin America

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since each country has its own individual musical art and mode of musical expression, just as it differs from every other country of the Western world in other phases of its national life. We North Americans frequently make the mistake of assuming that the culture of all Latin America is identical with that of Mexico, which is more or less familiar to us. In like manner we are inclined to suppose that Spanish culture and Mexican culture are identical. It is true that certain cultural elements are common to many of the Latin American peoples, but points of resemblance are minimized when one considers such factors as ethnology, history and geography which contribute noticeable differentiation in native musical forms and modes between even adjacent countries as in the case of Colombia and Ecuador, Ecuador and Peru, Peru and Chile. And certainly the musical culture of Brazil has little in common with the native musical expression of the west coast countries. In like manner the music of the South American republics is quite different from that of Mexico, Guatemala or other of the Central American republics.

No discussion of the music of Latin America can disregard the racial factors that have gone into the making of the musical idiom of the individual nations. In general those racial factors are the Iberian (Spanish and Portuguese) which the original Europeans brought with them, the native Indian which is still strongly apparent in the genuine folk music of Latin America, and the African which is found in Brazil, the coastal areas of Colombia, Panama, and the West Indies republics, Cuba, Puerto Rico (U. S.), Haiti and the Dominican Republic. The fact that the countries have used these racial musical ingredients in varying quantities and in varying combinations accounts for the differentiation in the musical speech of the Latin American peoples.

Supplementing these three basic elements in the music of Latin America (The Iberian, the Indian, and the African) which are the backbone of all of the folk music of Latin America, is the influence of the music of European Countries other than Spain and Portugal. The music of the Argentine pampas, for instance, is strongly reminiscent of its Italian origin, as the result of the extensive Italian colonization of Argentina during the middle 1800's, while the serious composers of all countries use the musical speech they acquired as students in Europe. It is noteworthy in this connection that the musical idiom of Claude Debussy is reflected in the works of many of the more mature composers of South America, most of whom studied in Paris during the days when the influence of the great French impressionist was strongest. Many of the younger composers realizing the richness of their own musical resources, however, have turned for their inspiration to their own heroic past, to their national legends and to the beauty of their own landscape, and have come to use with increasing success and effectiveness the musical idiom of their own folk music, such as the pentatonic melodies of the Incas, the vibrant African rhythms, the melancholy tunes of the Gaucho, the sprightly dance patterns that have persisted everywhere since colonial days.

Latin American folk music forms are many and varied. The most interesting are the rumba and conga of Cuba, the corrido of Mexico, the

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bambuco and pasillo of Colombia, the sanjuanito and yaravi of Ecuador and Peru, the cueca and marinera of Peru, the tonada of Chile, the tango and vidala of Argentina and Uruguay, the samba, modinha and chôros of Brazil.

Paralleling the folk music forms are the characteristic national instruments. Percussion instruments of the gourd type appear in the maracas of Cuba and Colombia, the sonaja of Mexico and Peru, the rêco-rêco of Brazil. Among reed instruments may be mentioned the reed pipes of Mexico, the antara of Ecuador, the quena and rondador of Peru. Instruments of the guitar type are found in various sizes and shapes, such as the tiple and requinto of Colombia, the bandolin of Ecuador, (a form of the mandolin), the charango of Peru, the cuatro of Argentina, the violão and caraquinho of Brazil. Both large and small accordions are popular in Argentina.

Although neither time nor space permits mentioning all of the significant composers of Latin America, no account of the music of Latin America would be complete without reference to the following important creative musicians: Carlos Chavez of Mexico, Guillermo Uribe-Holguin of Colombia, Andres Sas of Peru, Humberto Allende of Chile, Juan Jose Castro of Argentina, Heitor Villa-Lobos of Brazil.

## THE TEACHING OF READING TO GIFTED CHILDREN

Cora Lee Danielson, Department of Education for Exceptional Children, Los Angeles City Schools

The education of the slow or deficient reader is a vital problem. It holds the attention of large numbers of educators and parents. It motivates reading clinics and study conferences. We must acknowledge that this should be true when we think of the available statistics on deficient readers. From many sources we learn that for the nation at large approximately fifteen per cent of public school pupils are two or more years retarded in reading. In Los Angeles, consistently from year to year, more than thirty per cent of the emotionally maladjusted children who come to our psychological clinic are so seriously deficient in reading skills that they can not do the work expected of them. Their failure to read is a basic cause of their emotional disturbance.

At a recent meeting it was reported that forty per cent of the recruits and draftees to the army and navy of our literate land have reading ability below the fourth grade.<sup>1</sup>

Conditions like these are a matter for the most serious consideration. Not to lessen that concern, but rather to add to your problems, I want to invite your attention in another direction. Let us spend this period in the consideration of a problem little recognized as such and consequently given very limited thought and study. It is the problem of teaching gifted children to make the most of their ability to read and to benefit to a greater degree from what they read.

Logically it is of first importance in attempting to improve reading skills, to discover any physical conditions that may be factors in the prevention of improvement. Defective vision and hearing are probable factors but superior physical conditions seem to accompany superior mental ability. Fewer defects of any kind are prevalent with gifted children than with less able ones, and if defects of vision do exist, the desire to read is so strong that it compensates for the difficulty in seeing. I have known, in my experience with several thousand of these children, of only two who were severely handicapped in reading. In general, good reading is a distinguishing mark of gifted school children.

There are, too, certain identifying mental characteristics of gifted children of the school ages, that are commented upon by the persons who have made adequate study of the group. They are pertinent to the consideration of teaching this type of learners.

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<sup>1</sup> I have not been able to trace the source of this report in order to check on what test or on what standards the ratings were made.

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1. Gifted children have potentially active interest--nearing insatiable curiosity--in finding out about people, what they do and how they think; about things, where they come from and why; about the reasons for a world of things that are accepted without question by the great majority.
2. They have the possibilities of sensing the significance of data and of generalizing from these data.
3. The ability to interpret the implications of any turn of events is peculiarly theirs.
4. They have within them the possibilities of creating, of inventing or discovering and of applying discoveries and inventions to solution of problems that may trouble mankind. All of these characteristics gifted individuals have to a much greater degree than do normal people.

These pupils of superior mental ability read rapidly and evaluate critically what they read. What then can be done for them? Is it true--the often expressed opinion of the laymen and of a deplorably major proportion of those called educators--that bright children will take care of themselves and "get along"? In the matter of developing power and appreciation in reading there are bits of evidence to the contrary. Materials for more and better reading are often not available to them.

Some years ago, I made a survey, by means of a pupil questionnaire which was checked for accuracy by the parents, of the reading material easily available in the homes of six hundred children with intelligence quotients of 125 and above. The answers to the questionnaires disclosed that:

Sixty per cent of the homes did not have a "book case of books."

Fifty-two per cent did not have library cards.

Eighty per cent subscribed regularly to no magazines of the type of Harpers or Atlantic.

Ninety-seven per cent provided no children's magazines.

Seventy-three per cent read no current event periodicals.

Thirty-six per cent of the children read no books other than the ones furnished by the schools.

Considering these and similar findings as indicative of the dearth of inspiring reading matter for children living in Los Angeles we may assume much worse conditions in smaller cities and rural areas. We can further assume that it might be difficult for a bright child to take care of himself adequately.

Another difficulty in the way of gifted children who must take care of themselves is the barrier built by the increasingly greater provision being made for the slower learners in our schools. Simplified easy books must be provided for them if they are to read. Large staffs of university-guided workers are engaged in the simplification of the classics. Authors of children's books are writing down to meet the demand for easy-to-read books for the slow learners. Book budgets can not be stretched to cover the needs of all and the relatively large number of slow learners constitute a demand--almost a priority. Our library and school shelves are becoming crowded with easy-to-read books from which has been simplified the challenge to the minds of the gifted. There is little money left to buy those books that will challenge improvement in comprehension or in appreciation.

In our problem of how to teach reading to pupils who have acquired the mechanics and have the ability to understand and appreciate what is read, undoubtedly one essential is the provision of rich supplies of appropriate books--the best books written by the best authors on all subjects of learning.

In the opinion of the late Dr. Leta Hollingworth, an authority on the education of gifted children, an excellent university library is appropriate if not essential. Since such libraries and cooperative library faculties are too limited in number to serve the scattered gifted population, public libraries, school libraries, and private collections must suffice. Even from these sources selections must be made.

In my own experience as supervisor of classes for gifted children, approximately a fourth of my time is considered well spent in the selection of appropriate books. Each year all sources are searched, including publishers' lists and exhibit shelves, book review periodicals and sections. The result is several hundred titles recommended each year for purchase and use in the classes. The accumulation of yearly lists provides thousands of titles.

It is easily within the realm of possibilities that gifted children, surrounded by rich and plentiful collections of appropriate books would come out exceedingly well-read. However, teachers must remain useful to retain their self respect. (Besides, I am scheduled to tell how I teach reading). Perhaps the teachers' part is to provide guidance in the use of the knowledge and pleasure gained through reading. They so set the stage that there shall be the pupil purposing without which there is no learning. They assure that there shall be experiences that afford growth.

A professor at Stanford, where studies are made of the character and needs of the gifted, once made the statement that gifted children are far below their mental age in knowledge of content subjects, though they surpassed their chronological ages. That seemed to be true of the children selected for the special classes and we wanted to see if it was a condition that could not be remedied. In an attempt to find out we

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supplied our classes with the best and largest available collections of single copies of books on history, biography, travel and adventure, science and invention. The books were read in free reading time—at any time the pupils might choose. No assignments were made and no formal recitations were heard, but audience situations were arranged whenever a pupil or group of pupils wished to discuss a book or a problem suggested by the reading. For three consecutive semesters care was exercised to avoid class activity in a unit of study or field of interest related to the free reading material. We wanted to test the results of free reading.

The results, as measured by the battery of achievement tests administered at the end of the third semester, were surprising. Initially, the average grade placements in knowledge of history and civics, geography, physiology and health had been at the level normal for children of like chronological ages. This indicates actual retardation below mental grade placement and slightly less retardation below expectancy. The averages for reading, on the contrary, had been only slightly lower than the average mental grade placement, with word comprehension lower than sentence and paragraph comprehension.

The final test indicated improvement in reading only slightly greater than would be expected for normal pupils. That was, of course, because the children had been so near the level of their ability initially. The saturation point had been reached. However, in knowledge of the content subjects under consideration, the improvement of eight per cent of the pupils brought them higher than their mental ages, and seventy-two per cent reached mental age expectancy.

There appear to be some definite conclusions to be drawn from this experiment. One is that gifted children are not ordinarily exposed to materials, situations, or methods of teaching that challenge their ability. Another is that formal instruction in content subjects from text books may not be the best method of instruction for gifted pupils.

This second conclusion has been the arrow pointing us forward in our curriculum planning. Since our pupils learn more history facts and geography facts by free reading in supplementary books than they do by assigned lessons and directed study in text books, the correct procedure is to provide the necessary material for them and to expose them to socializing and democratizing experiences that will train them in the practice of the American ways of living.

Accordingly, we continue, and shall continue until we are convinced of a better method to encourage the development of more and better reading by means of a free reading program which has been expanded to cover wider fields of material. Through this method we hope also to reach the individual interests of children.

We have in mind the fact that many adult readers are narrow in their

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reading interests. Some read little outside of their professional, technical, or trade fields. Others spend their leisure reading time on current accounts of world events. Some even seek relaxation in mystery stories. Perhaps the reason for the narrow reading interests of the average person is that there was a lack of early exposure to the entire field of literature or to as wide exposure as possible.

Our practical device for a wide exposure for our children is to make a somewhat arbitrary classification of literature into groups that can be studied during successive periods of the school year. These classes may consist of poetry, drama, fiction, myths and folk tales, biography and history, science and invention, travel and adventure, and magazines and periodicals.

A selection of titles under any one class is supplied, lists of other titles that may be obtained at the libraries by individual readers are posted, and the pupils are encouraged to read freely. No hard and fast regulations are made as to the amount of reading to be accomplished nor as to what shall be done with the material read. However, in each class there is a degree of group consciousness that produces much sharing of experiences. They dramatize or demonstrate or read passages for discussion.

One class became much concerned over a few members of their group who were not ambitious readers, who habitually selected the easy short articles or books. The group decided to set up a measuring stick for books for their "slackers". They read and compared the books of their collection until they had decided upon a best book, a good book and an easy book against which each book read was measured. Though that was several years ago a similar practice is carried on in that class still. It was instituted by the pupils and is carried on by them. The teachers and I agree that it does not constitute an intrinsic motivation for book selection but we acknowledge that the results are worthy.

Another class devised an activity with periodicals that resulted in much of the real learning that comes when facts are gathered for use. When the consignment of magazines arrived some pupil suggested that they have a magazine store. Each pupil acted as salesman for one or more magazines. He acquainted himself with his magazine in order to give a sales talk to the rest of the class. He classified it as literary, current event, scientific, trade journal, etc. He knew when, how often, and where it was published. He knew the price, the publisher, and the editor. He talked of its value to students and attempted to prove that value by reviewing one or more articles in the number he had.

Whether they repeat that particular activity or not we try to see that our gifted pupils become conversant with the good magazines of the various types that they may know how to use them as aids to learning and may enjoy the literature to be found in them.

The ability to use reading as an aid to or as an integral part of

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research is, of course, not free reading. It requires an entirely different technique. It is study to find answers to problems and involves the critical evaluation of the material read to determine what part if any, it contributes to the solution. To practice this phase of reading is of inestimable value in the training of the young people who will be the problem solvers of the near future. In just that, they are afforded practice in the activities of their units of study--or field of interest.

Perhaps some examples of the problem-solving type of activities and what the pupils did in and with them will take the obscurity out of these remarks.

A class that wanted to entertain their parents and friends with "a play" were lead to consider the possibilities of a pageant of United States history. It seemed that valuable practice in research would come from obtaining their material for the pageant from the literature of the United States, and this was decided upon.

What books, stories, or poems did they know that pictured American life? Where could they find others? How could they get them read? These were preliminary problems that needed team work in the settling. They were settled satisfactorily and the group of thirty pupils read many, many different books. They decided that they had material for twelve episodes in the pageant of United States history. Each of the episodes was written and performed by two or three committees. All were evaluated and final selections were made by the entire group.

Their field of interest was United States history. Their problem for solution was to write and perform a pageant. Their research material was American literature.

A similar procedure has been followed in building a musical pageant from American folk music and songs.

Another group had so much difficulty in their search for material about the lives of the people of early Los Angeles that they made up their minds to put the knowledge they finally acquired into stories for others to read. They thought fourth and fifth graders could use the stories. The result was some fifty stories which had been lived by the children in dramatic play to test their probability. The end product, however, was the growth in the ability and habit of critical judgment and in working together for common goals.

The choice of material with which children may work for learning experiences is not limited. There are many fields in which pupils practice the desirable activities of living together, developing initiative, creativeness, alertness, cooperation in solving problems, while they learn to read. It varies from class to class and from time to time. It is never the mere acquisition of facts in the preparation of an assigned lesson which may be recited to a group of other pupils who have been trying to gather the same facts from the same assigned pages in the same

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text book.

Any field-wide phase of the application of science to the improvement of living, or the evolution of any of the common things that touch the lives of the pupils should assure the pupil purposing and necessitate the desired reading, evaluating and organizing. So, too, should the study of the development of law and order, or an attempt to find out what conditions in a country leads that country to make war on the people of other countries.

I want to turn now from methods of developing reading in research activities to vocabulary building and to encouraging the growth of appreciation.

The building or growth of a rich vocabulary is naturally the by-product of all reading and of listening to conversation and other types of verbal expression, and of expressing one's self in words. The richness of the by-product can be increased, undoubtedly, by direct effort. Our plan is word study. A pupil or a group of pupils becomes interested in a word because of its newness, to them, or because of its unusual use. It is submitted to the class for consideration. Other examples of its use may be cited by the pupils. Dictionaries are consulted for meanings and uses. Derivations are interesting and sometimes give keys to the meanings of the word. Derivatives come in for discussion and use, as do the effect of suffixes and prefixes. Practice in the use of the word adds it to the tools of expression.

These practices in word study are functional in reading and in expression because each one grows out of the need or the desire to know about a particular word. Though they appear incidental they are daily occurrences which are productive of gratifying growth.

To assure growth in appreciation of good books and artistic expression by direct methods is so difficult--the results are so incapable of measurement that we are not sure our practice is the best or even an uncriticizable practice.

It has many facets--the ones familiar to librarians, of exhibiting choice volumes in attractive positions and conspicuous places; the one of getting new consignments of books before the old titles have lost their attraction. Choice books are commented upon enough to arouse interest. Exceptional sections are read aloud. To these are added a literary club workshop of regular occurrence during which individuals read and write and submit what they appreciate for the appreciation of the group. The situation is informal and natural. A group of individuals with similar interests are discussing books, articles and poems that they like and are being influenced in their opinions. They are surrounded by the best books obtainable--always some for the enjoyment of which they must stand on tip-toe and stretch. In such situations there is inevitable growth in appreciation--natural change from selecting the innocuous or

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the mediocre to enjoying the best.

During the last week of school I visited a group. Many of the children were busy doing last things, but eight boys were grouped about a table. They were trying to finish the reading of "Conquest Through Air Power" but had stopped to ponder whether de Seversky's opinions should carry weight. One of them said to me as I came up, "Have you got your copy yet? It's a good book".

What I am trying to make impressive, without being dogmatic or too tedious, is not how we teach reading--what techniques we use. It is these incontrovertible truths:

Children, perhaps with the single exception of technical non-readers, learn to read by reading, just as they learn to walk by walking or to swim by swimming or to be democratic by practicing democracy in their daily living.

The function of the teacher is to put the child in the way of reading so the child may purpose to read.

Purposing is vital to learning but the pupil must have materials with which to learn.

It is a function of the teacher to see that the materials are ready.

These fundamentals are true no matter what concept of reading we have in mind or what aspect of reading we are discussing.

## RELATIONSHIP BETWEEN NUTRITIONAL, PHYSICAL AND PSYCHOLOGICAL FACTORS IN THE MAINTENANCE OF A WELL BALANCED EQUILIBRIUM

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This is a broad subject, so broad that it nearly includes our knowledge of man to date. However, the Nutritional, Physical, and Psychological aspects are inseparably related, and these relationships must be taken into consideration as such if we hope to make progress. That these factors bear Einsteinian relativity cannot be doubted if one attempts to isolate them.

To those who might be interested in the mathematical formulation of this relationship it is possible to put this in terms of algebraic formula. In our previous language and thought we usually think of these factors as being entirely separate which can be expressed as such: Nutrition = a, Physical = b, psychology = c, a plus b plus c = X (result), while if these factors are inseparable we can think of them as f(abc) = X. This latter formulation implies that the result X of the equation cannot be solved unless the preceding factors are all included.

Have you ever seen a mind going for a walk? A leg running by itself? A vitamin eating peanuts? These parts act only when related to living organisms and with much coordination.

For a moment we can digress to some of the earlier history of mankind. At a time when he was occupied with life from the standpoint of physical survival--that he was so occupied is evidenced by our presence--it was of primary importance to have a good body, and to select living habits so that this factor could be transmitted to their progeny. There is no doubt that they too had imperfections who from our various records were not accorded any special care for the propagation of their life.

Examination of the remains of many old cultures has made us realize that they possessed a degree of health not generally prevalent today. Coupled with the findings of these specimens are the examples of primitive peoples widely dispersed in various parts of the globe. We have an opportunity to see what it means to maintain the basic dietary habits of the race and then to adopt the eating of modernized refined foods as much of the civilized world is so doing.

In 1939 Weston Price, a Cleveland, Ohio, dentist, published a book entitled "Nutrition and Physical Degeneration," in which he shows a contrasted picture of these two types from a nutritional background. There are extraneous factors which play a part as shown by some workers who have observed that peoples' faces become longer when they are required to speak the English language; that menstruation sets in at earlier dates in warmer countries; that people of colder countries are taller in stature due to delayed endocrine development, and many other variations

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which affect the process of life.

However, in considering the primitives these extraneous factors are reduced to a minimum because the people of many of these areas, such as areas of the Pacific, Eskimos, portions of South America or places where civilization has not affected the lives and habits of the inhabitants, have only a difference in food as the most significant variation. These changes in body variations as a result of inadequate nutrition are consistent enough in occurrence so as to be termed "deficiency diseases;" such as upper, middle and lower one-third deformities of the face, pinched noses, protruding teeth, receding jaws, pigeon breasts, polydactylism, club foot, spina bifida, sexual anomalies, sex reversals and many other congenital malformations. That these can be produced in one generation of primitive natives when placed upon refined foods is most remarkable. That primitive peoples are frequently more susceptible to some of the ways of civilized life may be true, yet also most fortunate for us that we are more resistant to these destructive forces.

Dr. Price revealed in his book the marked change in the dental arches, teeth, jaws, which not only handicapped their mastication of food but opened the way for other diseases to follow in later years. A similar type of work was undertaken on animals by Dr. Francis Pottenger of Monrovia in which he placed animals of the same litter in adjacent pens only to change their food which was to Group 1-CLO, raw milk and raw meat; Group 2- Same except the meat was cooked. In group 2 abnormal changes were noted throughout the entire organism of the animal, so much so that no organ or system escaped. Naturally these experiments cannot be interpreted directly to human beings, yet might suggest that if any favorable comparison as to the human vs. animal is made it is on the side of the animal because their bio-chemistries are more able to withstand difficulties in adjusting nutrition than ours.

To reveal the importance of a good start in life it was most noticeable in the animals who had the better beginnings that they were able to withstand greater dietetic assaults in later life. Very often we hear parents use themselves as a comparison by pointing out their good health and how they now eat, forgetting they were probably raised in some rural district upon a good quality food. My return question to these people is usually a request to see their children, which commonly give evidence of one or more stigmata of deficiency states. So it is today that much of the time of many of our profession is taken up with the correcting of these deficiencies which were primarily avoidable.

It appears as we continue along that we too want to believe that these altered states are just one of those things we expect from life; that the abnormal has become normal. This important exchange of belief has been a contributing factor toward the deterioration of many races. In the practice of medicine it is the usual to notice that people are not surprised at the peculiar physiognomies, delayed development, low immunity to infection, dental problems ranging from delayed dentition,

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dental caries to extensive orthodontia—all of which is not frowned upon as a possible unnecessary nuisance; but in some instances, it has become a matter which has been taken for granted as unavoidable.

At puberty in some cases the sex reversals become more marked—the boys tend to have widened hips, narrower shoulders and vice versa in the girls, thus tending to feminize the males, and masculinize the females. So we see the individual confronted with a new series of problems added to those he already has from some other system of his physiology, and then we can begin to understand his ideas of comparison which may lead to abnormal life styles, which we will discuss shortly.

There are also the variations which are not visible to the eye directly, as the faulty biochemistries and endocrine gland disturbances. These peculiarities manifest themselves in disturbances of calcium and phosphorus, as in bone variations; magnesium, iodine and other minerals. They may result in problems of the water balance in which the tissues are puffy and somewhat waterlogged; and lastly the great enigma of allergy respected almost as a god, but now experimentally produced in animals by deficient foods. While many of us may view these unfortunate malformations as a scourge of mankind, we at least are beginning to see they are amenable to changes which are within our grasp so that we may apply them in mass.

That physical fitness be a goal in itself let us forbid, but only a means to an end. That many handicapped persons eventually exhibit brilliant achievements in useful things in life is well known, yet this is no license that we continue as life is now if we are to prevent decadence of the human race. The responsibility of seeing that information regarding the cause and effects of somatic deficiency would best be shared between the teachers and physicians at the present, later the parents can take over when they get the fundamentals.

The physician must reach people before conception occurs to advise them about proper dietary intakes. Some primitive peoples have the potential mothers on a diet of special food for three years before child-birth to insure a healthy child. In one particular tribe it is the work of the bachelors of the tribe to supply this special service. Some of our civilized backwardness can be laid at the door of organized opposition of businesses manufacturing food products on a basis of sales per year, and not service to the human being. Yet is it not we who are really responsible in that we allow such a situation to continue?

It ought to be so the teacher could explain to the pupils some of the basic facts in his dietary schedule without interfering with the parents, yet as a part of educational activities. If it is not possible to use such a method it would then be advisable for the school physician to make repeated checks on the children and give recommendations to them and their parents. Some method of visual education, as moving pictures, etc., could be produced to portray the advantages of adequate nutrition, and the price we must otherwise pay.

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advantages of adequate nutrition, and the price we must otherwise pay.

At this time in our country's struggle for survival it is not difficult to see where we stand in some of our physical attainments. The records of physical examinations for military service reveal the great number of individuals who are deficient in eyes, teeth, ears. It is a much higher percentage than in World War I. No doubt some of this deterioration originates in school ages. We see in football or other athletic groups that the participating individuals must be on adequate dietary regimes to preserve their strength, yet what about the other children--do they too not need strength and physical fitness? That this careless attitude may go on into adulthood and produce unfitness is quite a common finding. A few days ago I was speaking with a Red Cross Director who explained to me that the majority of the women in her classes were unable to lift a stretcher, hoping such strenuous physical duties would not be required of them. Today the aggressor nations are training their people in toughness, hard labor, simpler foods and anything but a soft life. Were not the British surprised at the lightning success of the Japs in the Malaya jungles? The Russians' ability to withstand their long, cold winter, and their ability to outwinter the Germans in many respects. I doubt in any of this do we find a training in softness.

It is in no sense the purpose of this paper to instruct in dietary techniques, but to point out that healthful foods close to their natural state are best for our survival value, unless we are willing to pay the price of altered physiology in one form or another. That refined and processed foods have lost much of their vitamin, mineral, etc., value and their chief contribution has become sterile calories which are hardly enough to be worth considering and not sufficient to sustain a good psycho-somatic state. In general the human laboratory is not equipped for refined foods including large doses of carbohydrate, and may I say in due respect to our rationing of sugar that we all would be better off to dismiss refined sugar from our dietary.

Work from such outstanding investigators as Hermon Beck of Hooper Foundation, and Weston Price of Cleveland has disclosed that by revamping the diets of children 85% of dental caries can be eliminated by one step--namely the elimination of sugar. Is it not true that all schools have their canteens loaded with products which are filled with refined sugar, under the guise of devlivering immediate energy? I have long come to recognize in adults this so-called need for immediate energy as being indicative of disturbances probably in the nervous system, while in growing children it can be supplied by substances as cheese, chocolate, gelatin products, etc., which would supply the body with good quality fuel, also include the necessary products as vitamins and minerals. The running of school eating places should be on a basis of quality food served, and not the sweetness of the article or the amount of profit derived.

Some of you may be curious as to the psychological relationship to the nutritional and physical factors. Medicine too has been curious

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about this problem. The milieu of medicine is equally open to criticism for its lack of progress and like many other professions is learning by growing pains. In recent times we have had three schools of thought; the first known as mortuary medicine, in which we had diseases caught and caged in bottles with formaldehyde, so that visitors and students passing by could see the demons on the shelves and at least be grateful they had trapped so many. All in all it was a sort of dead medicine. This was followed by veterinary or laboratory medicine; to be sure very much alive but connected only with animals, so much so that every drug, disease and bit of peculiarity had to be laboratory demonstrated, or the patient was suffering from a "too active imagination."

Then we come into the third and present type of medical practice, namely, human medicine. It will be seen that in the two above varieties there was no person connected with the disease, organ or disturbance. If we are to give this connected person any recognition, then the psychological factor becomes important, and thus we see that these three factors must function dependently if we hope to get full values from our efforts in attempting to construct a society in which we would wish to live.

As has been shown the direct effect of nutrition upon bodily shapes and its various functions, it must now be evident that the nervous system has been no exception to this process. Rare cases have been reported of infants without cortices, and other severe anomalies, but there is little doubt that minor variations are also present. This is no doubt a difficult point to prove, but evidence is slowly accumulating that the primary relationship of nutrition cannot be excluded if we are willing to accept present observation. In many of our texts today they blame the genes and chromosomes for playing such tricks on us. Again in such a situation we would be helpless, and all we could anticipate would be disintegration of the human race. This point was of particular interest to Weston Price, who found many examples of primitives who had large families of children in which some were born while the family was on excellent food, and the remainder after they had lived on refined products for periods of time, even though short they produced offspring which were much inferior to the former children. Thus the chromosomes become only one of many expressions of the lack of physiological equilibrium which is manifest in progeny who are obviously deficient in one respect or another.

For the total sum of these variations, which include the nervous system, Alfred Adler called them "Organ Inferiorities." Many detailed studies were done to show the relationship between the individual's pattern of life and his background of physical handicaps known or unknown to him.

Once these organ inferiorities are produced it is advisable to see how they can affect the life of the individual. Studies on handicapped children reveal a goodly attempt to compensate for the more obvious and extreme malformations, while the more vague deficiencies which exist are

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not so easily seen, and thus are eliminated from such studies. In the first group of obvious abnormalities there is usually an open decision on the part of the individual to attempt some method of compensation, however, in the latter group the abnormalities are usually veiled, and the feelings and complaints of the person are not justified by some obvious or visual explanation. In these vague varieties the individual may develop notions about himself as being something very peculiar or different from other people, and thus may grow into a direction of feeling of being unique or peculiar, whichever justifies his established goals.

It is possible to do some grouping by organic systems by the manifestation of subjective symptoms in the student. The more common complaints as headaches, indigestion, stomach aches, constipation, abdominal cramps, diarrhea, frequency of urination, menstrual cramps, palpitation, fatigue, colds and respiratory ailments, depressions, elations, obesity, or leanness, may be selected by the student according to his inferior organ.

This will usually give the teacher the direction in which she may expect further symptoms and most frequently they will repeat according to their organ inferiority. The student who exhibits gastro-intestinal complaints will continue invariably in that system. Those who select headache, fatigue, nervousness may imply some imperfections in the nervous system, and so we could continue throughout with colds and respiratory infections, posture and the skeletal system, and the arrangement of the symptoms in keeping with the organ inferiority would be quite constant.

When the individual has decided on a method of problem solution through organ symptoms it will be the beginning of a breakdown or neurosis in attempting to solve problems in a normal manner. Life has become too difficult to accept its problems with equal responsibility so these symptoms are taken on as a means to avoid this direct contact with the slogan "I would but." Once such individuals learn that their tricks of avoidance give them what appears to be a logical excuse they frequently are quite content to carry on their self swindle.

These organ inferiorities in no way justify the symptoms or entitle one to blame heredity, bad food or anyone but one's self, but we must see in this manifestation the nature of the purpose for which one has used the organ inferiority. Most people do have one or more organ inferiorities, but this is not taken as an excuse to have symptoms, or as a substitute for solution of their problems. This meeting of the organ inferiority with the symptom is one which requires much attention in readjusting the student to live without such a crutch.

Through proper education we can hope to greatly diminish the percentage of organ inferiorities and thus remove a load from the individual which is not necessary to his life or conducive to his happiness.

## HOW TO MAKE USE OF BASIC ENGLISH IN THE CLASSROOM

Roberta Forsberg, Bakersfield Junior College

The grant-in-aid from the General Education Board enabled the Department of English of Whittier College to set up an experimental course entitled, "An Introduction to Critical Interpretation". It was intended for average to superior sophomores who had had one year of practice in the use of the Basic vocabulary and the minimum essentials of orthology. Difficulties in scheduling, however, made it necessary to include second semester freshmen and a few juniors, some of whom had no previous acquaintance with Basic. The class met two fifty-minute periods per week for sixteen weeks. The program was planned by Dr. Albert William Upton and Miss Roberta Forsberg, and was conducted by Miss Forsberg. The purpose was further experimentation with Basic English as an instrument of analysis in the interpretation of fairly difficult prose and verse.

During a brief introductory review of such fundamental concepts as multiple definition, the four phases of meaning, context, etc., the students prepared protocols as collateral assignments. Most of them were written in Basic. The use of the protocol as an introductory step is regarded by us as vitally important. In this instance they were intended to aid in developing the concepts of context and stock response, but the protocol serves several noteworthy purposes:

1. It establishes a lively awareness of the communication problem at the start;
2. It enables the instructor to size up the personalities with which he has to deal;
3. It permits the instructor to give direction to the enterprise without seeming to do so. The students play with a stacked deck, as it were;
4. Although teaching by protocol is difficult, it greatly increases the degree of interest and participation on the student's part.

The following stanza from Cymbeline was intended to demonstrate failure to communicate because of lack of context:

Fear no more the heat o' the sun,  
Nor the furious winter's rages;  
Thou thy worldly task hast done,  
Home art gone, and ta'en thy wages.  
Golden lids and girls all must,  
As chimney-sweepers come to dust.

It brought forth the usual range from mere guessing to a thoughtful sensitive interpretation.

"As to the sense, it seems to me that he is saying to someone, probably dead, that he need not fear the things of the world any more

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because he has finished his task on earth, taken his just dues, and gone on to the next world. He adds a few words to the effect that rich people as well as poor must die, indicating that the one to whom he is speaking was rich or well-beloved. It sounds to me as if it came from Shakespeare."

The usual firm, belligerent stand on a stock response was made by a junior college transfer.

". . . it is mildly entertaining and the last two lines definitely mar the selection. The first four lines are fairly acceptable romantic prose but the last two lines with their pun cause a descent from the lofty to the ludicrous. The last two lines are definitely out of place and destroy the effect of the former four. . . . I would call this selection mediocre."

The selection of prose material to bring out the stock response was easy. Almost any modern political document will yield more than enough. In this class a paragraph from one of Dean Inge's essays was chosen:

"When a Tsar or a bureaucracy finds itself forced to govern in opposition to a vague national feeling which may at any moment create an overwhelming national purpose, the autocrat becomes the most unscrupulous of demagogues, and stirs up racial or religious or social hatred, or the lust for foreign war, with less scruple than a newspaper proprietor under a democracy."

Out of this came a valuable multiple-definition exercise; vague national feeling, national purpose, autocrat, demagogue, democracy. As a result of oral discussion, one student made a surprising discovery and commented: "But we can't define bureaucracy as a government by experts, e.g., civil service, because this would make the United States a bureaucracy!"

As an example of prose without context, the following sentence, taken from a college text, was used:

"The new humanism was to emancipate the intellect from the shackles of emotion."

It not only served the purpose of an exercise in multiple definition but provided an excellent general introduction to Hggen and his scientific humanism.

Lastly, as an illustration of stock response stimulated by poetry containing an idea alien to American educational conditioning, the following Millay sonnet was chosen:

What's this of death, from you who never will die?  
Think you the wrist that fashioned you in clay,  
The thumb that set the hollow just that way

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In your full throat and lidded the long eye  
 So roundly from the forehead, will let die  
 Broken, forgotten, underfoot some day  
 Your unimpeachable body, and so slay  
 The work he most had been remembered by?

I tell you this: whatever of dust to dust  
 Goes down, whatever of ashes may return  
 To its essential self in its own season,  
 Loveliness such as yours will not be lost,  
 But cast in bronze upon his very urn,  
 Make known him Master, and for what good reason.

This sonnet from "Practical Criticism" has proved more successful than any other single selection in arousing student interest in the interpretation problem as far as Whittier classes go. It provokes not only wordy but profitable debate.

The multiple-definition technique was being applied to complete interpretations rather than single words. The Basic translations were briefed on the board and classified. One plodding and persistent freshman arrived most clearly at the Millay solution: "The idea or ideas behind the last five lines are not clear to me. In fact, the only way I can make any sense out of them at all is to give capital letters to the "his" and "him" of this selection. Then I can say that the Maker of Men would never let such beauty (whether it is physical beauty or higher beauty of the mind, etc., I am again unable to say) to come to destruction. Thus I am able to make connection between the ideas of the last five lines and the rest of the poem. However, even if I do not take on the use of capital letters, which are not present in the copy of the poem, the meaning of "urn" is lost to me. Surely he does not have the belief that Our Maker must meet death." The student had moved right out to the edge of the board but could not bring himself to make the dive! The blackboard classification revealed, with verbal help almost unnecessary, that most of the criticisms were based on conventional religious attitudes. During the last part of the hour a definition of stock response and its social implication was begun.

Lancelot Hogben's "Retreat from Reason" and I. A. Richards' "Basic Rules of Reason" were taken up as soon as the protocols had done their work. The students were given short reading assignments in both books and a passage from Hogben to be put into Basic. These Basic "reductions" gave the basis for class discussion and demonstration of the key words in Hogben as well as some of the chief "thought-control" words in Richards. The discussions were designed to show the difference between the old and new logic and to provide the student with a thinking process which would enable him to build his own machine for operating on the basis of the new logic. The following assignments were discussed:

1. "The range of choice which any type of society offers depends on the type of technology it employs." p.41

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2. Multiple definitions of Liberalism, economic nationalism to be put into Basic.
3. "Education is only a live social issue when it is frankly tendentious," p.52
4. "If we hope to reinstate confidence in the human reason, we shall not discharge our aim unless the teaching of history produces citizens who realize the part which advancing scientific knowledge has played in the material progress of mankind." p.60

Of course, the discussion of such passages and the key words in them spread out to include the rest of the Hogben ideology. Hours were spent on biotechnology, economic self-sufficiency, etc. As an example of this ramification into the Hogben context, passage number four quoted above gave rise to debate as to what Hogben meant by "history and the part played by scientific knowledge in the material progress of mankind. Did he perhaps have a special definition of history? Was there an intimate connection between this definition and his conception of the progress of mankind? One might get the answer by investigating other Hogben items. So the class undertook to search for a clue in "Mathematics for the Million" and "Science for the Citizen". They wrote up their findings in Basic. What success they had is revealed by quotations from these papers:

"When the common man says he has no interest in mathematics (for example) it is because he cannot see where he will be able to make use of it in his daily life. The knowledge given is too far away from the practical experience of the person, and therefore it has no attraction for him. Hogben says it should not be put aside from the teachings, but should be given attraction to the common man, by giving its relation to the general experience in society. The same is true for history and the sciences. Also there should be a closer connection between the sciences and history. He says that the man of science and the man of history must do work together if we are to give education growth and development. That is why he says the man of history must have knowledge of the part which the growth of the knowledge of science has had in the material forward development of the society of man."

The last quotation was from a freshman; the following is from a junior:

"So it is the idea of the theory of Hogben that history should not only have to do with the facts of the past but also the effect on the ideas and opinions of the society by the operations of science as well as the change made on the structure and organization of the society by the theories of science. The workings of science should not be thought of as being a mass of knowledge that the modern man will never be able to have an idea of, that science is for the experts and made

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by the experts and becomes a great, almighty instrument which it is necessary to keep with the respect given to religion; but rather a story of knowledge that all men may have some idea about, in order to be a part of a well-ordered society. The history of that society and the history of science cannot be discussed as two different bodies of knowledge but as parts of each other; one process is parallel to the other changing from a time of little or no impulse to one of much industry."

In the case of sentence number three (Education is only a life social issue when it is frankly tendentious.) an interesting discussion developed over the word "tendentious", arising out of such Basic translations as this of a Freshman poet:

"Hogben, himself, gives two senses for tendentious. One used with education, is giving the person knowledge to make him able to go on living fully outside his own special work as well as in it--that is, to make him able to get along with other people and be able to take an active interest in his nation and in other nations. The other sense of tendentious, used here with education, is education for a purpose other than the knowledge itself--a getting away from knowledge for knowledge's sake and into giving in school education, a knowledge which can and will be used for living and a special purpose, personal or national."

A freshman suggests Hogben might mean:

"It is necessary that there be education of the feelings as well as of the mind. Not only is man to have clear knowledge, but his acts are to be controlled by his education. It is necessary that man be responsible to society. Education is a burning question to all men. It has as its purpose to make society to "understand" (have knowledge of) society, and to have control over society in a wise way for the well-being of all."

Another freshman puts the case for his definition simply and graphically:

"A person should get away from his daily work enough so he could make events come about in society. He should have active interests in government and all other such structures of society. It is necessary that things have a purpose and then men should make certain events come about towards doing the purpose. All of this is in my sense tendentious. A 'life social issue' would be something on the minds and in the hearts of society--great interest by all of society."

It was discovered that people with such widely different views as Hutchins and Hogben might be called tendentious, if the word is defined as "having a definite goal". Such a definition naturally led to an outline of educational theories past and present on the basis of purpose. The cleavage seemed to be between those who insisted upon setting up a

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definite purpose and those who insisted that such a purpose must not be set up.

As the class warmed to the task of interpreting Hogben, the improvement in concentration and skill tended to swing the center of focus from mere communication to considerations of logic. We had anticipated such a state of affairs with some concern for it involved what we call at Whittier the "starred-word" problem. We have starred some sixty words in the Basic list "upon which" in Richards' phrase, "the ordering of the senses of our other words is dependent" or which give difficulty because of the numerous levels of abstraction which they operate. When the student comes upon a starred-word in translating he is required to reduce it to other lower-order Basic words. A recently enlarged list includes the following words:

act	apparatus	authority	behaviour
adjustment	art	balance	belief
agreement	attention	automatic	body
brain	fiction	necessary	rhythm
cause	field	operation	scale
common	force	order	science
complex	form	organization	selection
condition	general	part	sense
control	government	place	sign
current	history	political	simple
decision	humour	possible	sort
degree	idea	probable	special
design	impulse	power	structure
desire	instrument	process	substance
development	knowledge	property	system
distribution	law	purpose	tendency
education	learning	quality	theory
effect	machine	reaction	thought
event	mass	reason	true
expansion	mind	relation	value
experience	natural	representative	work
fact			

The importance of a decision as to when such starred-words are to be analyzed became apparent in this advanced group. Should the words be defined before work on a book like Hogben is begun or should the defining be done as the words are discovered in the reading? The rapidity with which the work is done depends altogether on an answer here. For example, when the discussion of Liberalism came up in connection with Hogben, three or four class hours were required to straighten out the historical, sociological, etc., question involved. Special problems develop in connection with different groups, and if a thorough job is to be done, any pre-established lesson plan must be given up until the difficulty has been removed.

But more vital problems may be involved. Does finding the word

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first in a definite context hinder a complete multiple definition? Or does this help to give direction to the defining process? Perhaps the experience of the Whittier class has helped give an answer. Assignments in "Retreat from Reason" and the "Basic Rules" were given at the same time. The idea was that as multiple definitions of the critical words in Hogben were worked out, the students should be learning the rules which govern their own thought processes. Their appreciation of Richards' work might thus be increased since they themselves were being called upon to provide their own practical demonstration of its construction. The results were garnered in a set of Basic essays on the "Basic Rules". A few papers quoted in full will best illustrate the various degrees of success:

What Contribution Does the "Basic Rules of Reason"  
Make to Clear Thinking?

What are the basic rules of reason and are they true rules? Multiple definition--what is it? What contributions are made to clear thinking? These are questions that come into my mind as I make a beginning on this paper.

First, what are the basic rules of reason and are they true rules? Language is the machine we make use of to put and keep our thoughts in control. To have control of our language we have to have control of the senses of our words. From our experience in Hogben, we have seen that many of our chief words have no one definition. Rather, they may have several meanings if taken in different senses. We must get the right use of the senses of our chief words if we are to have control of our words. The chief words are those upon which the ordering of the senses of our other words is dependent. The basic rules of reason are the senses of these chief words and their ways of working with or against one another. It is not true that there are the senses and also rules for putting them together. The senses themselves give, in their ways of acting, the rules of reason.

Multiple definition--what is it? It is just what it says it is--a machine for separating senses of words. We take the most important words of a statement (those which the thought is dependent upon) and make lists of their chief senses. Then, when in the process of discussion, it is necessary to give attention to the different senses, we are able to see, through a comparison, the correct sense we need. I. A. Richards has done this for the chief key words of our Basic Words. Multiple definition is a process in a certain system we should make use of in our reading and discussion. When we come to a statement in which the meaning is not quite clear, we should put to work this system of thought. (1) Put the statement in basic to see the key words. (2) Make use of multiple definition of these key words. (3) Put aside the senses that are not useful, and (4) Make a selection of the most useful senses in the order of degree. Through my experience with Hogben, I have the belief that this system will make clear any statement.

What contributions are made to clear thinking? I have just given

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you the most important one--the multiple definition. And I hope I have made clear to you its workings and also the part it plays in the system to get an understanding of a statement that is not clear. Another contribution is the basic rules of reason--the senses of these chief key words of discussion and their ways of working with or against each other--which are outlined in the back of the book for us. The basic rules are really not much different from multiple definition. The basic rules are the key words in discussion and multiple definition is a process to be put to use on any word that is not clear. Still another contribution is this scientific process of thinking that one must go through in doing multiple definition. Even if the basic rules were of no other good to us, this thinking process, that you must go through, would give us value enough for us to have knowledge of the book.

Everyone has knowledge that we have a language problem today. We must get better control of our language. To get this a fuller control of the senses of words is necessary. I feel you may get this through the methods of the "Basic Rules of Reason". The point we must keep in mind is that there are divisions between the senses of words. We must find them and make use of them as such."

The Purpose and Use of the Basic Rules of Reason

The rules of reason (as given by I. A. Richards) are "The senses of the chief words, and their ways of working with and against one another". In this writing I will give my complete attention to the attempt to make the above more clear and to give the values and the uses of these rules of reason.

The purpose of our existence is to be happy, or, in the words of Richards, "to make our desires come about". How are we to do this? By the use of logic, says Richards. What is logic? Logic is the science of reasoning; the science of putting one's thoughts in order that we might see their connection with each other, and that from this collection of thoughts we might be able to see and have knowledge of the conditions of our existence. If we once have knowledge of these conditions, we will be able to put ourselves and our doings in agreement with them, and thus make the existence of man more happy and more complete. To put it another way, Logic is clear, straight, reasoning by which we may be able to see true facts. Reasoning is the act of putting thoughts in order and of seeing their connection with each other.

Thus far we have (1) the purpose of our existence, and (2) the way making our purpose become a real thing. What do the basic rules have to do with these things? Just this: we are not able to keep our thoughts in order, we are not able to have logic or clear reasoning without the use of language. Because of this our control of language becomes our control of logic. Logic is the way "to make our desires come about." It is clear then, since language is so important to us, why it should be used rightly. The basic rules of reason have been designed to make us

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use it rightly.

Now we have what seems to me to be the pattern of Richards' ideas:

- (1) The purpose of our existence--"to make our desires come about."
- (2) The way to do this—logic
- (3) The way to give existence to logic—the use of language.
- (4) The way to have control over language—the basic rules of reason.

Thus far I have given the purpose and the use of these rules. The rest of this writing will be an attempt to say how these rules are put to work.

Logic, we have said, is clear reasoning. Reasoning is putting thoughts in order and seeing their connection with each other. Much reasoning, however, is not clear reasoning, since the thoughts are often not put in definite order in one's mind, and since the thoughts themselves are often not clear. Bad use of language is responsible for this. We can do away with this by the use of the basic rules, "the senses of the chief words, and their ways of working with or against one another." "Our chief words," says Richards, "are the words upon which the ordering of the senses of our other words is dependent." If we are to keep our reasoning straight, we must keep in mind that the senses of these chief words are different with their different uses. This makes the senses of the words which are dependent upon them, and even the sense of the order of these words, give very different thought as the senses of the chief words make their changes. If we keep the senses of these chief words clearly in mind, we are able to keep our thoughts straight and have clear reasoning. To do this we must look to the context of these words (all that which is about them) for their right sense; we must keep in mind that the sense will make changes as the use of the word makes changes, and above all, we must keep in mind that words are only tools that they are not "owners of senses" but instruments by which man's ideas and thoughts are put in order and given direction."

As a result of the Basic discipline and a study of the Basic Rules of Reason, a kind of formula was developed. It was intended to make the approach to interpretation a little easier for those who might not have learned to take full flight on their own "logico-experimental" wings:

1. Determination of the terms which are causing difficulty. Reduction of these into Basic.
2. Multiple definition.
  - Step 1. Dictionary definitions
  - Step 2 Reduction of dictionary definitions
  - Step 3 Use of psychological definitions if necessary. (The term psychological is used here in contrast to the logical or genus-

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species definition. "Get out of the word situation into experience" is the watch-word).

Step 4 Rejection of inapplicable definitions

Step 5 Selection of applicable definitions in order of degree of suitability to the context.

The last five weeks were taken up with work on a theory of criticism. The aim was to give the students an instrument of critical evaluation which would help them to analyze all problems, not only those concerned with literature. It is obvious that the critical principles of I. A. Richards are intended to have this wider application. If this were not true, he could hardly say, as he does, that the future civilization is largely dependent on sensitive and accurate interpretation, on a thought-machine with which to confront reality--not retreat from it.

Material was gathered from three sources: (1) John Livingston Lowes' "Road to Xanadu"; (2) I. A. Richards: "Principles of Literary Criticism"; (3) I. A. Richards' "Interpretation in Teaching". No attempt was made to retail the contents of these volumes in detail. Two or three main points from each were well worked out in explanation, class discussion, and written exercise. Again the aim was to have these main points built into some sort of comprehensive pattern in the mind of the students. The whole complex was founded on a few Basic principles of psychology. It might not be out of place here to state that the class took a particularly lively interest in the discussion on I. A. Richards' psychology. This does not have reference to the three or four brilliant or talkative members of the class who may always be relied on when argumentation is in order. Students who had hitherto been interested but silent became decidedly curious, desirous of more and more information. Perhaps there is a teaching moral here. Material which tells students something about themselves, about their relations to environment, about control of themselves and their environment seems to have a high interest value.

Certain portions of "The Road to Xanadu" were used to describe Lowe's theory of the psychology of the creative imagination, the probable relation of the sub-conscious to the conscious in any truly imaginative work, mathematical as well as literary. Protocols on "The Ancient Mariner" formed the basis for class discussion.

But one does not give freshmen a working knowledge of such ideas as these by talking day after day. Words, more words, is not the answer. Since freshmen have neither the knowledge nor the appreciation to appreciate the end at the beginning, a way must be found out of the verbal situation. However much Dr. Adler may deplore the influence of John Dewey on contemporary education, one of his doctrines has been proved psychologically sound. One learns by doing, and the Whittier staff has discovered that this is no less true in the teaching of English.

The one tool that makes the kind of language instruction described herein possible on the freshman rather than the graduate level is C. E.

## Forsberg 11

Ogden's "Basic English". Just how this 850 word vocabulary was constructed will be given briefly. The Principles underlying the word selection must be understood. Otherwise the claim made for the job this abbreviated English does seem exaggerated.

The secret of Basic is in the elimination of the verb. By discovering the sixteen basic physical actions in the thousands of complete English verbs, Ogden made it possible to say anything in 850 words which can be said in the complete vocabulary. Most verbs involve three elements he found—one of the sixteen actions (putting, talking, coming, going, letting, making, doing, having, giving, seeing, saying, sending, getting, keeping, seeming) plus a preposition (called in Basic a directive because its function is to show direction) and a noun toward which the action takes place. The by now classical example is the breaking down of "to disembark" into "to get off the ship". The rest of the words include 600 nouns, 200 picture (ball, house, dog), and 400 general words (amusement, animal, building). Of course, abstractions are not eliminated in Basic although the process is, in the main to express abstract ideas in simple terms with comparative few meanings. The idea is to get back to reality, to the things that can be seen, touched, felt. Those abstractions which remain are called key words by Dr. Richards. That is, they are those words (e.g. law, knowledge) whose meanings control the meanings of the words they are used with—in complete English as well as Basic. Control of these words gives increased control or all language. This in turn makes one master of his own mind and gives him increased power over his environment. It must be clearly understood that Basic discipline does not involve the substitution of 850 words for those in the N.E.D. It is only a means of helping the student to appreciate the variety and richness of the tongue he inherits. It is a way of enabling him to use it with greater efficiency and greater beauty.

One of Basic's important contributions is that of putting the teaching of grammar on a rational foundation. Repeated failures have made it abundantly clear that grammar cannot be profitably taught as a logical science. One student out of a hundred will use English correctly because he has been taught the rule. Basic makes it possible to teach functional grammar. At Whittier functional grammar is defined as the discovery by each student of what work words are doing in a sentence. Nouns are words which name things. Whether they name objects, a house, or whether they name acts, working, the function is still the same. As stated before, prepositions are words which show direction. Adjectives are a most important unit of the grammar work because the way they work is psychologically important. If one understands their work one understands a great deal about his mind. Since adjectives are the names of qualities a mind attributes to an object, it follows that qualities do not exist as absolutes. The way is paved for a modern inductive, un-platonic theory of knowledge. This is a brief outline of how the functional Basic method may operate. Space will not permit of a complete explanation.

## Forsberg 12

One of the major questions which this paper set out to answer was the practical one of assignments and class discussions. The majority of the assignments are the translating of passages of difficult prose from John Herman Randall's "The Making of the Modern Mind" into Basic with the help of a manual on the theory of language by Dr. A. W. Upton, chairman of the English Department. Several different and legitimate interpretations will result because of the many definitions of the key abstractions. These translations, written on the board, are discussed by the class, and the definitions of one or two of the key terms are listed. It is evident that such training in interpretation will not only clarify a particular day's assignment, but will lay a sure foundation for interpretative ability and greater power of expression. Here is a practical means of teaching the psychology of language without trying the impossible--"convincing" freshman verbally.

While these things are of inestimable value in a re-orientation of English in the curriculum, Basic makes yet another contribution. It establishes the disciplinary element of Latin translation and the study of mathematics, which have gone by the board as required subjects. Social students are "soft". They do not have the capacity for continued painstaking work at a difficult job which mathematics majors have. They lack the ability to build step by step a skill they can only hope to attain after years of effort. The Whittier experiment has proved that history and English majors can acquire such capacity once they are given a tool for attacking the interpretive problem.

## TECHNIQUES FOR MOTIVATION IN THE CLASSROOM

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There is a Chinese proverb that states: "the fish sees the bait, not the hook." I could not help pondering this bit of wisdom as I prepared this paper. If it is true that there is an analogy between motivating children to learn and "baiting the hook," then my topic should rightly be "interesting bait"!

Not so very long ago I was told that a certain class of sophisticated high school seniors explained carefully to their teacher that it was necessary for them to be motivated in order to learn! Imagine the students telling the teacher that it is necessary to "bait the hook." That is supposed to be a pedagogical secret.

Since this is a "reading" conference and since the title for this paper has been assigned, "Motivation of Interest," perhaps we should read the title according to Dr. Peter L. Spencer's definition of reading, i.e., making a discriminative reaction to the stimulus. The word motivation calls to mind such words as need, want, wish, purpose, motive, desire, inner steer, predisposition, intent. Psychological terms such as Woodworth's mechanism and drive theory, the psychological stream, the driving stimulus, physiological, conscious and social motivation, stimulus patterns, reward and punishment, praise and reproof, rush upon us. This is the field for the psychologist. Certainly not for me.

Motivation of interest is a most inclusive title. I could discuss the problem of saving rubber and gasoline and still be within bounds. Certainly that is a motivating interest to many at the present time. I would therefore like to limit my topic to "techniques for motivation in the classroom."

Even then there is much to consider. Do we wish to provide motivation for the child to read the printed word symbol? To make a discriminative reaction to stimuli? Or are we interested in motivation from the point of view of the counsellor and director of guidance?

The latter reminds me of a specific example of such motivation. There was a student, a boy, who had assumed the unfortunate attitude that if he could "get away" with something and not be caught, no one would be the wiser or worse for it! He came to the desk in the library one morning and asked if he might step outside for a moment. Students not being permitted to step outside whenever they wished resulted in some investigating. Why did he wish to step outside? Did he mean by "outside" just outside the door or half way across the campus?

Finally he disclosed his difficulty. He had just discovered that the prized medal which he wore on his watch fob was missing, and he thought that he might have lost it on the path outside. He was permitted

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to search. When he returned looking very downcast and disappointed it was suggested that he report his loss to the office. His reply was that if anyone did find it, he wouldn't turn it over to the office. At least he wouldn't if he happened to find something similar on the grounds.

Here was a time and place for the teacher to attempt to motivate this boy along various subjects, particularly to show him that honesty is one of the most desired marks of character.

In the course of the conversation it was learned that he had the misconception that the office was a place where "somebody might catch up with him", and that also was one of the reasons why he hesitated to report the loss of the medal to the office. However, after being assured that the office was a friendly place for students, and with the desire to recover the medal burning deeper into his heart, he went to the office. More to the teacher's gratification, I believe, than to the boy's was his quick return with the medal. It was a sheepish looking boy, indeed, who admitted that "there must have been one honest person in school, because someone had turned in the medal only a few minutes before." This made an impression that would not be quickly forgotten, and is an example of the countless opportunities the teacher has to motivate students toward better ways of living.

I know of one teacher who keeps in mind continually the rapport of his class in his efforts to stimulate. If he does not succeed in getting one good, hearty laugh from the group each day, he considers that day's work a failure. Another predisposes the class with well-organized activity. There is no time in her class for anything but work. There are others, I believe, who rely on the "hickory stick."

You have heard it said that "a good teacher is worth more than a load of books." Yet the efficient teacher is continuously watching for good books with which to motivate. There is much disagreement regarding the qualities which make a book motivating. Have you not had the experience of handing to an average reader a good book and have him remark that he did not enjoy books like that? And upon inquiry it is discovered that the book is (1) too thick; (2) the type is too small or too large; (3) the pictures are old-fashioned; (4) there is no conversation to make the book lively reading; (5) the cover is not attractive; and last but not least, (6) the story is not interesting.

Often we read in theory that many of the qualities mentioned above are objectionable, but not so often do we actually find students who are able to analyze their reasons for not liking certain books. I wish that I had kept a record of the number of pupils who objected to books because of the size of the print. Usually the print is small and tiring to the eyes, although in one or two instances there have been objections to large print with the comment that it is for younger readers! It is gratifying that high school students are aware of such physical qualities of books, particularly when they have difficulty with their eyes.

The boy to whom I referred a few minutes ago was one of the diffi-

## Genung 3

cult readers to please. He stressed both the physical qualities of the book and the content to a point which was almost exasperating. He said that he liked only "blood and thunder" stories; was particularly interested in books about aviation during World War I and II, and liked any reading material about guns.

In attempting to analyze his reading interests, much to my surprise we discovered, upon actually reading the books which he particularly recommended, that his "blood and thunder" books were a misnomer. What he really liked was a book filled with excitement, fairly easy vocabulary, much conversation, little or no description. He was correct in saying that he liked books dealing with aviation, guns, and warfare.

As soon as his real interests were discovered, the problem of finding books which he enjoyed reading was much easier, and we had a basis upon which to motivate him into other fields of reading interests.

A significant statement is made by Walraven and Hall-Quest in their recent book, "Library Guidance for Teachers": "To guide young people in reading, to fit the right book to the right reader the guide must know books. . . . Few teachers read enough; they read too little and too well; they lack that easy familiarity with and knowledge of many books."<sup>1</sup> Equally desirable, however, is the teacher's knowledge of the child's interests, in addition to a broad knowledge of the reading content of books to be suggested to the student, and also knowledge of his ability. With this information it is possible to guide the pupil in his reading choices purposefully. It should be remembered that "Reading is to the mind what exercise is to the body" and reading tastes should be developed if possible.

In attempting to motivate pupils on the basis of such information the following plan might be feasible.

On my library desk is a set of card drawers designed to file cards three by five and four by six inches in size. On the four by six cards there will be recorded for each student in school the following facts which will be transferred from the office cumulative record cards: name, address, mental age, chronological age, reading ability, grade placement, school last attended, chief interests. Below this information will be left space for a cumulative record of his reading during the enrolled period in his present school situation, in addition to a word or two describing his reaction to the books read.

This will accomplish several things for the librarian. In the first place it will give a basis upon which to work with new students without loss of time. Secondly, a complete picture of the student's reading achievement will be available which will serve as a guide to the teacher

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<sup>1</sup> Walraven, Margaret Kessler, and Hall-Quest, Alfred L., Library Guidance for Teachers. Wiley, 1941. p. 151

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and librarian in motivating the reading of the pupil. It will be more complete than the record of book reports in the English teacher's file, for the reason that a record of all his reading will be available (all books read from the school library). In the third place it will give the teacher, the librarian, and the principal information as to what percent and what members of the student body are reading material from the library. It will be possible to discover when in his school career the student begins or culminates library reading.

What of the mechanics involved in this procedure? How will the student's reaction to each book be obtained without boring the pupil and increasing the mechanical routine in the librarian's work beyond the possibilities of accomplishment? In the National Education Association Research Bulletin for January, 1942, devoted to problems of reading, there are many splendid suggestions.

The book-mark system is a suggestion which might be a workable one. Each time a book is made ready for circulation a gay-colored book mark is to be placed in the book pocket. On the book-marker is a space for the pupil to indicate briefly his rating of the book and his name. When the book is slipped and shelved the book-mark bearing the best rating of the book is left in the book-pocket.

This would accomplish two things. First, it would give the students an opportunity to know their friends' reactions to books as they are searching for a good book to read. In the second place it would furnish the student's reaction to the book which would be recorded on his cumulative record card without making the procedure required and boring to the student.

An idea similar to this was tried by one of the English teachers in our school this year. For each book read in the English class, a three-by-five-card was filled out by the student indicating the author, title, name of student and reaction to book. These cards were filed in the library and were used by students for reference when selecting books. If a book's physical qualities were not particularly attractive (as with many sets of Dickens and Thackeray), but a student-rating of the book was found favorable, then this would be a motivation for others to read it also.

The mechanics of keeping each cumulative record up-to-date would undoubtedly offer the most serious difficulty in carrying out the plan. Any confidential information appearing on the card, such as mental age, or reading ability, would necessarily have to be recorded in such a manner that it would be impossible for students to de-code the information. With this possibility eliminated, there would be no reason why student library assistants could not record the information on the cards.

Now to come back to techniques for motivation. Have you ever noticed the magic quality which something new has in influencing the actions of an individual or a group? Cognizant of this, how often a teacher

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changes the complete program for her class on a certain day, because the group is not in the "mood" for the subject planned. I recall one class which was enthused about a unit by nothing more than the teacher's introduction into the room of something new from which the class was to guess what the unit to be studied would be.

There is something equally fascinating about newly received books! Especially when they can be read while the gay-colored jackets are still intact and the smell of the printer's ink and paper is still fresh. If it takes nothing more than the new, uncataloged book to lure problem children to read, the teacher and librarian can afford some inconvenience in cataloging the books!

During the past year as new books were delivered to the library, they were stacked on the desk to be checked in. Students who rarely ever read anything except "Life" or the comic strips began to show an unusual interest in these new books. Very soon questions were asked as to whether the books could be checked out, and if they might browse through them. It was suggested that, although the books were not yet ready for circulation, that they might be read in the library. To watch these students, who in many cases were rather serious discipline problems, select a book and read during an entire period with the request at the end of the hour for the librarian to please save the book for the following day, was most gratifying.

When this procedure was found so effective, new books, upon the suggestion of the librarian, were frequently stacked on the desk at a particularly opportune time, not for catalog purposes, but for motivation.

In most cases where voluntary selections were made from the desk, the fact that it was a voluntary gesture on the part of the student was an important one. One boy who very seldom read and who was one of the chief sources of worry to teachers and administration, discovered a Thesaurus of Humor on the desk. This book was thick, cumbersome, and not at all attractive. But he enjoyed reading the jokes, and not only read quietly in the library himself, but lured into the library some of his pals (problem cases) asking if they too might read the book before its being cataloged.

The change of attitude of some of these most difficult students was amazing. They handled the books carefully, were very particular about working quietly in the library, and were unusually polite and courteous. Imagine a customarily discourteous boy standing when the teacher approached the table to talk with him a moment!

The newness of the war and the defense program has been another motivating force. Youngsters who have never experienced our country at war are eager to know about the army, the navy, weapons of warfare, aviation, defense, and many other related subjects. These interests accounted for slow-readers poring over the daily paper, day after day, devouring every little bit of information about the war. They accounted for

## Gemung 6

the sophomore English class taking the responsibility of keeping in the library an exhibit of posters and pictures relating to war and defense. They accounted for a large percent of the increase in book reading.

The chief joy of the boys, particularly, was the great variety of stories about aviators and aviation. (Publishers are certainly capitalizing on this subject). Tally Ho! by Donahue (Macmillan) was one of the most popular, the story of an American's experiences with the R.A.F. Aviation Cadet by Lent (Macmillan), Battle Stations by Hudson (Macmillan), a small book in size and one of a series now available, telling about a submarine; Elements of Aeronautics by Pope and Otis (World Book), a text, but popular with the scientific-minded students. Aces Wild by Winston (Holiday), author of the popular Dive Bomber, Wings of Victory by Halstead (Dutton), Air Base by Guyton (McGraw Hill), Pilot of the High Andes by Litten (Dodd) were a few of the sought-after titles. One series which appealed to the slow readers, but which was not as high quality as those mentioned above was the Dave Dawson Series published by Crown and written by Bowen. Only fifty cents a book, it was a very inexpensive series. Its particular appeal was thrills, excitement, and the breezy style of writing.

There are many books of a general nature dealing with phases of the war. One of the much-loved titles by both younger and older people is the little book written by the two refugee children upon their arrival in the United States from England. Child-like, these children, Eddie and Caroline Bell have told their impressions of the United States in Thank you twice (Harcourt). For very young children the United States Office of Education has authorized the printing of Little Oscar's First Air Raid by Mead (Dodd) which is designed to show children what to do in an air raid.

Fighting Ships of the U.S. Navy by Pratt, a beautifully illustrated book and inexpensive (\$1.00) is evidently very successful in its motivating power. Shortly after it was received in the library, two boys were caught attempting to "sneak" it out!

The Citizen's Series although probably too advanced for most junior high boys, supplies the desired information for older boys. Ten titles are now available in the series, each bearing the heading, What the citizen should know about, and then the various subjects are indicated, as for instance, the army, the navy, the coast guard, the marines, the air forces, the army engineers, our arms and weapons, the merchant marine, civilian defense, and modern war. (Norton).

Several biographies have appeared, one of the most recent being General Douglas MacArthur by Miller (Universal), popularly priced. Philip Guedalla's Mr. Churchill is of course for adult readers, but Young Winston Churchill by Davis (Scribner's) is suitable for junior and senior high. Men of Europe by Simone (Modern Age) was enjoyed by a tenth grade boy. Hahn's Soong Sisters is suitable for older high school students.

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We can never seem to have too many of the Dodd Career books. Both boys and girls ask for them. Of the war series, Ginger Lee, War Nurse is entertaining as well as very informative. Similar in style and attraction is Coast Guard Cadets by Bell (Dodd) .

The question has arisen, "How much and how potent should the war literature be for our young people?" Should reading be confined to the type of literature, if we can call it literature, which I have just cited, which is for the most part entertaining, or should some of the more serious, brutal, realistic depictions be included? Some are of the opinion that such titles as Shirer's Berlin Diary (Knopf), Davies Mission to Moscow (Simon), You Can't do Business with Hitler by Miller (Harcourt) and others are necessary to draw the sharp contrast between democracy and ways of dictatorship, peace and war. Personally, I agree that a balanced picture should be presented.

Although perhaps more prosaic reading for the youngsters, without quite so many thrills, that concerning activities in defense and war preparation should certainly be included in a well-balanced reading program. Several good titles have appeared. Prentiss' Civil Air Defense is a good title, although probably too advanced for junior high age. Your Career in Defense by Davis (Harper) enters the field of vocations. One of the most highly recommended titles has been W. D. Boutwell's America Prepares for Tomorrow (Harper), but this again is for more advanced readers.

Fortunately in the field of defense information, many attractive pamphlets have appeared which young students as well as older ones like. The Office of Civilian Defense at Washington has quite a number free of charge, and is a good source. A complete listing of sources is available in the Curriculum Laboratory, Claremont Colleges.

With the increased interest in the countries involved in the war, materials are now just beginning to make their appearance for various age groups. For those who have waited so patiently for supplementary materials on the Latin-American countries, their desire is now granted, as was indicated by the exhibits of the Inter-American Conference this summer on this campus. Certainly with the clever titles, the beautiful illustrations produced with an eye for the rich Latin American colors, there is no lack of motivation. We have time to mention only a few of the many titles. However, a very complete list of book titles is available in the United States Office of Education's selected list of readable books for young people, Our Neighbor Republics.

Elementary and junior high students are fortunate in having the New World Neighbor Series (Heath) of attractive little books dealing with many phases of South American life. Teachers of remedial reading may have noticed that the intriguing Village that Learned to Read by Tarshis (Houghton) has appeared on lists of books for retarded readers. Maria Rosa, Manuelito of Costa Rica, the Silver Llama, the Blue Butterfly goes

## Geming 5

to South America are a few of the titles for the younger students. Chuck Martinez for Junior High, Lupe and the Senorita for Senior High and many others are listed. A very complete list has also been prepared by Dr. Ruth Stanton of the Chino Library, with another available in the Curriculum Laboratory Bulletin, Claremont Colleges, for Fall-Winter, 1941-1942.

But enough for books. With the qualities of motivation thus far described through books, it should never be necessary for the teacher to apply the book as suggested by the following paraphrase:

Teachers who teach  
 "A child by the book  
 Can, if sufficiently vexed,  
 Hasten results  
 By applying the book  
 As well as applying the text."

Have you ever noticed the students who literally "wear out" the "Life" magazines and the comic strips? We have a large file of "Life" which is never filed because copies are in the hands of non-readers who seem never to tire of looking through these files. It is the first magazine to be taken off the rack of current magazines. Why? Because these students can read the pictures while they have difficulty in reading the printed word symbol. The printed word symbol with all its abstractness is their Waterloo in the history class, in the English class, everywhere they turn. Pictures are something that they can enjoy and understand.

And so we come to the vast possibilities of the audio-visual aid in motivation. Providing information, motivation, and creating attitudes is its chief function. Used correctly it will motivate these "Life" reading youngsters to gain information from worth-while pictures which will supplement the printed word symbol. It will encourage them to continue in school, will create new interests in their previous narrow horizons.

Watch a group of lively boys who have been in the habit of skidding around corners on two wheels in their old "jalopies" consider seriously the problems presented in a motion picture concerning rubber and gasoline saving. Watch them try some of the tests shown in the motion picture to see if they can save rubber as well as shown in the picture!

And so we could continue, citing one example after another of the part the audio-visual aid plays in this important subject. It is well to remember that the "sugar-coated" techniques of motivation discussed thus far are only one phase of the broad field of motivation, and that the goal, the inner steer, is one of the most important. As Emily Dickinson has so well said:

"Each life converges to some center  
 Expressed or still;  
 Exists in every human nature.. a goal..."

## RADIO IN EDUCATION IN TIME OF CRISIS

Mrs. Elizabeth Goudy, Director of Radio Education and Curriculum Assistant, Los Angeles County Schools

In the year of our Lord 1680, back in Jamestown, Virginia, Governor Berkeley, who "loved his wine, but feared his people", made this public pronouncement:

I thank God there are not free schools or printing here, and I hope we shall not have them these hundred years; for learning has brought disobedience, and heresy, and sects into the world, and printing has divulged them, and libels against the best of government. God keep us from free schools and printing press.

Well, Governor Berkeley would turn in his grave if he could hear the familiar: ". . . This is Columbia's School of the Air of the Americas," or the opening signature of the Standard School Broadcast. Today, 250 years after Governor Berkeley's pronouncement, we have free public schools, a free press, free speech, and a democratic America.

But perhaps the Governor realized all too well that people can be educated in so many ways—guided into so many skills, trained in so many different habits, and indoctrinated into so many patterns of believing and acting that in one land, one generation of boys and girls can be educated for death and slavery—while in another country, a generation of boys and girls can be educated for life and freedom.

Governor Berkeley was afraid of the printing press—feared the printed word lest it be used as a force of destruction—as he said, to destroy the "best of government." Were he alive today, Berkeley might well express even greater fear of the spoken word, for in a little over twenty years, radio—communication by the spoken word—has come to be one of the most powerful weapons for instruction and destruction the world has yet to know.

Think of the number of words poured from loud speakers into one day: 924 radio stations in the United States are broadcasting through 60,000,000 sets. Americans listen a total of 126,000,000 hours per week to radio—a sum almost as staggering as the daily cost of this war. Broadcasting in democratic America is only a part of the total picture.

Eight hundred international short wave stations around the world broadcast to the world.

Eleven hours of broadcasting every day are directed to North and South America by the Nazis; Japan directs programs to this hemisphere four and one half hours each day.

Every five days England broadcasts to her empire and to anyone who will listen—as many words as are in the Bible or as in all the works of Shakespeare.

Why has all this come about? Because men and nations know and believe in the power of the spoken word. Radio has made it possible for men to partake in and benefit from the accumulated information and experiences of the ages. And yet, today radio is also being used to destroy human achievement.

World War No. II is demonstrating that people can be bombed by air with words as well as with high explosives. Hitler has told us that "words are acts" and has boasted that propaganda will give him the means of conquering the world. Radio broadcasting is a weapon of attack for the totalitarian states.

Perhaps Hitler is right: Words can be acts! Do Americans believe what they hear? The classic example is Orson Welles' dramatization of "The War of the Worlds" over the Columbia Broadcasting System--a broadcast which unwittingly caused hysteria and panic. Orson Welles and his players thought that the idea of men from Mars attacking the earth a bit hackneyed and trite, but they reckoned without placing full value on the frightening power of the device which they used. They reckoned without the terrifying reality that the human voice gives to verbal symbols. We now recall with amusement some of the things that were not funny at the moment. There was the man who shouted to the Bronx policemen: "They're bombing New Jersey!" How did he know? He heard it on the radio. Then he went to the roof and "I could see the smoke from the bombs, drifting toward New York. What shall I do?"

A Pittsburgher found his wife about to take poison. She exclaimed, "I'd rather die this way than like that." Searches for gas masks, attempted suicides, fleeing to the hills are indications of the hysteria which followed the broadcast. One old lady commented, "Well, if it didn't do anything else, it made a lot of people pray." But it helped do something else; it made us realize the power of radio, it made us aware of the gullibility of the best educated people in the world, it gave us evidence that our ears are less civilized than our eyes.

But let's come a little closer home to find an instance of a mid-west newscaster who started a run on a bank by simply reporting the disappearance of a banker. In Los Angeles a few years ago, newspapers printed "scare" stories about the danger of floods during the heavy rains. People were only mildly concerned. Yet, when radio gave a very cautious account of the same flood situation, people lost all reason and began to leave their homes. To stop them, messages had to be broadcast urging people not to leave their homes. In another instance, the mention of infantile paralysis created a panic among listeners who besieged civic authorities and stopped activities for several hours until their fears had been allayed.

The ear is more responsive to what it hears than the eye is to what it sees. To advertisers, hearing is believing--for they are willing to spend \$171,000,000 a year to influence our buying habits. Father Coughlin's appeals have resulted in deluges of mail and telegrams upon

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Congress. In February, 1940, when Congress debated neutrality--radio broadcasts for and against brought 100,000 letters to the representatives of the people within a few days. Yet of all the media of communication, radio is most trusted--which makes it potentially the most dangerous. Fortune Magazine once asked Americans: If they heard conflicting stories, which would they be more likely to believe, "what they heard on the radio, or what they read in the newspapers?" More than half of those questioned said they would believe what they heard before they would believe what they read. Surveys show us that 70% of our families listen regularly to news broadcasts and commentators. Sixty-one per cent of the students questioned in a modern high school told us that radio is their primary source of information on current events, and it was a secondary source of information for all others.

The Payne Fund Studies showed that children spend 6 to 7 times as much time listening to the radio as they spend seeing motion pictures--yet we have been aware of the influence of the motion picture for many years. Boys and girls spend  $2\frac{1}{2}$  hours listening to the radio for every hour they spend in leisure-time reading--and educators have been greatly concerned over the influence of leisure-time reading for several decades. But what has been done about the problem of radio listening?

If we would not be ostriches and delude ourselves by sticking our heads in the sand, we must face the fact that radio affects the minds and hearts of all who listen. In totalitarian states, people gather obediently around their radios to hear the voices of their masters. Radio is doing their thinking for them, and is not helping them to think for themselves. If in America, radio is to be our servant and not our master, then we must become critical listeners, listening intelligently and actively--not passively--to the words we hear. At no time has the challenge been greater than today, and what we, as listeners, do about our listening may in a large measure determine the future course of democracy.

What, then, are the implications of these facts for teachers--especially teachers of English and social studies--in elementary and secondary schools, yes, and in colleges too. Teachers can use radio news and commentary programs--those heard during school hours as well as those out-of-school. There are two reasons why teachers should use these programs. First, because young Americans must be helped to listen with discrimination. We cannot have a nation of half-listeners unless we would peril national defense and our own way of life by false rumors, misinformation, and panic. Students who have used news broadcasts and commentary programs are asking questions like these about their favorite commentators--

Is he a man of broad experience--experience which has qualified him to pass judgment on world events?

Does he speak from prejudice and personal bias?

Does he treat facts honestly or sensationalistically?

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Does he confuse news reporting with his personal comments?

From what sources are his facts obtained? How have they been obtained? Are they stories planted by Axis nations in neutral countries for dissemination?

Here are other questions boys and girls might ask about such programs:

Does repetition of a news item necessarily establish its importance?

How does rate of speed and the tone of voice of a radio speaker affect the way a listener feels about what he hears?

Can an expert in world affairs become a radio commentator if he has a poor speaking voice or poor radio personality?

How much freedom should a commentator have to express his own ideas and opinions?

Not only do we need to develop discriminating listeners to news and commentary programs but we have a responsibility for using these broadcasts to keep ourselves informed, to help us understand contemporary problems. No longer can we wait until current events pass into textbooks to understand, evaluate, and judge them. We must be informed now, we must try to understand current happenings now to meet present-day issues, and to make decisions with regard to world affairs. In short, our biggest job is to deal intelligently with contemporary problems.

Dr. Milbo of the University of Southern California has pointed out that in the social studies field there is an increasing emphasis upon current problems. He says this trend may develop to the point where ninety per cent of the social studies curriculum will be concerned with problems and events related to the world today. If this is the trend, then the modern media of communication--the radio, the newspaper, the motion picture, current periodicals--will become basic texts for any study of contemporary affairs, and the history books will be used to supplement or complement that study.

The Los Angeles County Schools Radio Log in its last issue listed 36 news broadcasts, making sure there were at least two for each hour of the day from seven in the morning until ten o'clock at night. More than 80 news commentators and foreign broadcasts were also included. This does not mean they were used by all teachers in the schools, but it means we think these programs are important to our educational program in wartime.

What about the so-called national defense broadcasts? Such programs as "They Live Forever," "You Can't Do Business with Hitler," "The Army Hour", and many others? I also mean those regular radio features which have turned their emphasis to problems of defense. This latter

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group includes "America's Town Meeting of the Air," "The People's Platform," "The University of Chicago Round Table," "American Forum of the Air," "What's It All About," and others of a local nature. Then too, there are special broadcasts by war-time Congressmen, by heads of the various special bureaus, boards, and groups in charge of housing, rationing, salvaging, man power, bond sales, and so forth. Shall the school use these radio programs? How can the school ignore them when boys and girls are looking for answers to questions like these--questions which they themselves have asked:

What are we defending?

How can we, as students, improve the morale of our school and of our nation?

What is my responsibility as a student in the present crisis?

What is my job in national defense?

After the war--what then?

The answers boys and girls, young men and women make to these questions will have much to do with the turn of events--indeed, with the future course of democracy. But again, use of these programs demands a knowledge of how to listen. Unfortunately, there are still radio speakers who use vague terms which they never define. We are told that we are fighting to save freedom. Whose freedom? What freedom? Freedom is one thing to the labor leader, another to the banker. Freedom may mean the right to stand anywhere in this room, or freedom may mean the right to stand anywhere in this room except on my toes.

Magic words, catch phrases, emotionally-charged words are false maps, and can lead to confused thinking--if they lead to thinking at all. How often do words have the right meaning for the listener? As a case in point, there was the learned doctor of education who was also a Sunday school teacher. His pupils were too young to read, so he taught them songs, poems, and prayers. One Sunday morning, school-teacher-like, he thought he would test each little pupil's knowledge by having each repeat the Lord's Prayer. All went well until one small girl began reciting--and this is what she said, "Our Father which are in Heaven, Hollywood by thy Name--"

In listening to radio speakers, forum discussion broadcasts, and dramatized programs, pupils need to be taught how to listen for facts, for details, for main ideas, to gather evidence, to discover false analogies, dogmatic statements, and to interpret data. Public schools have long been dealing with the problem of reading and writing illiteracy, but what about listening illiteracy? We talk of developmental reading programs--what of developmental listening programs?

We cannot leave a discussion of radio in education in time of crisis without considering for a few minutes at least the many other, shall we

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say, regular broadcasts which can be used by schools to enrich the curriculum. I refer to the "School of the Air of the Americas" broadcast five days a week to the nation's schools, programs which are developed with the cooperation of the National Educational Association and other leading educational groups. The "School of the Air" broadcasts have been used experimentally in selected school systems throughout the country over a two-year period. The results of this nation-wide utilization of radio programs have proved beyond a doubt the value of radio as a teaching tool. Yet only 2% of the teachers in the United States are regularly using the "School of the Air" broadcasts. Besides these regular programs designed for school listening, there are the "Standard School" broadcasts that do a splendid job of building appreciation for music and integrating it with English and social studies. The broadcasts on Latin America, like "Down Mexico Way," can make significant contributions to classroom work--if we will only make use of them.

The Los Angeles County Radio Log lists about 160 radio programs that contribute to the modern curriculum because we believe, and four years of experience have substantiated our beliefs, that radio is a dynamic and significant educational resource.

So far, we have discussed the importance of using news and commentary programs in our schools, especially in war-time; the place of national defense broadcasts in education; and third, we have mentioned the need to use the many excellent regular public service programs that can enrich the curriculum.

There are several other responsibilities with regard to radio in war-time. One is the responsibility of keeping our channels of communication free. Being a democracy, the United States is still cherishing, even in war, its right to regard rulers as fallible men, to regard leaders as persons who can make mistakes. This country still cherishes its right to know all sides of an issue, its right to learn the truth.

As citizens we are guardians of that freedom. It is not the Federal Communications Commission who alone can keep radio free, it is not Congress, nor the President. We, the people, must insist that radio channels be kept open, that people be told the truth so long as no military secrets are revealed, and that as long as Congress can debate questions, radio should be permitted to present all sides of a problem. Without this freedom, radio can become the forerunner of totalitarian tyranny--an instrument working against democracy rather than for it. Keeping radio free from authoritarianism is as important as keeping public education free from forces which might seek to dominate and control it.

Teachers and pupils have another responsibility to radio. When radio programs give boys and girls insights into our growth as a democratic nation, when they present great American achievements in drama, art, music, industry, and science; when radio programs contribute to an understanding of vast and complicated forces operating in our contemporary world, then we have not only a responsibility for using these programs,

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but we have another duty--to enlarge that listening audience, to get others to use the program, to work out techniques for winning new listeners. Schools have sometimes joined with other community agencies such as the library, the church, the P.T.A., the local newspaper to build an audience for a series such as the "Cavalcade of America," "Unlimited Horizons," "Down Mexico Way," and "What's It All About?" Many others deserve larger audiences--and as is true of most programs other than amusement features--a systematic audience-building effort is needed. The schools can help.

The formative agencies in our society are the home, the school, the church, press, cinema, and radio. If we accept the facts which I stated earlier about the extent of radio listening and its potentialities as a constructive or destructive force in our lives, then we, as educational people, as parents, as citizens, have the right to examine radio's offerings to make sure radio broadcasts are doing an adequate job of shaping the attitudes of our young people so as to help give them a faith to live by, a goal to aim at, and a share in the tasks which have to be done. We have the right to examine the wide range of radio offerings to see what programs are built around the American tradition, what programs give a better understanding of the purposes of democratic civilization itself. Are there any broadcasts which depict the Old World backgrounds from which the colonists fled? What programs portray the strenuous adventure of the pioneers against man, beast, climate, and environment? Are there any broadcasts that show our failures and successes at self-government? The Epic of America--as portrayed by radio can go a long way in building that unity of democratic faith we need now more than ever before. If these programs are missing from the radio bill-of-fare, then, as citizens, we can make our voices heard and radio will recognize our wants and needs, for it, too, reflects the society of which it is a part.

Hitler has said "Universal education is the poison of the people," but our history shows that we Americans as a people are committed to a great faith in democracy and to free universal education as an instrument for insuring its success. This means that free public schools are responsible for educating all of the children of all of the people. To do this effectively we, as teachers and administrators, must use every human and material resource at our command. I have tried to show in the course of my talk that radio is one of the most important resources of the modern school and that in war times, its importance as an educational tool is increased a hundred fold. Radio belongs in the modern school. We must use it constructively to help preserve and maintain our way of democratic living.

## HEARING AND READING

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My own research into deafness as a causal factor in child maladjustment, which has been conducted for the past three years in Juvenile Hall, Los Angeles, has developed facts of a startling nature, none of which detract in the slightest degree from arguments herein propounded as to the importance of good hearing in the reading process. This research, based upon precise audiometric examination of each boy and girl in that institution, totaling more than 2,000 new cases each year, has discovered that deafness is in number one position among the physical defects, even leading malnutrition which is so common among the types of homes from which Juvenile Hall receives the majority of its inmates.

If this type of physical defect, basically organic, but which soon involves dynamic disturbances, is now definitely known to be among the leading causal factors in juvenile delinquency, it must at least be considered as of more than passing importance in the acquisition of an education, and particularly in that phase of education so closely associated with hearing--reading.

The reading process in the pedagogic definition, is based upon language and the apprehension of the symbols representing it. The symbols may be in the form of ordinary printing or writing; in finger spelling or speech-reading for the deaf, or Braille for the blind. In any event language or an understanding of language must precede reading, and where there is an impediment to the acquisition of language, or to understand language, reading is not acquired without special instruction.

Several reasons are usually given for inability to read or to read properly. Most of them will be discussed by others in this conference and therefore need not be enumerated here. The one being considered at the moment is not usually recognized even though often considered: the inability of many children to hear perfectly.

An inability to coordinate groups of words into sentences is an indication of the possibility of an impaired auditory sense. This inability is particularly noted by speech-reading teachers, wherein many adults, gifted with a complete vocabulary, find it very difficult to learn the process of reading speech from the lips and other speech organs. They find it almost impossible to coordinate the faculties involved, while others become adept within a short time. Medical authorities give a reason for this by pointing out that the portion of the brain directly stimulated by the sight is in a different portion than that which responds to an auditory impression. A lesion of any kind will result in reading deficiency because of the inability to obtain a smoothly functioning balance between visual apprehension and auditory thought.

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The basis of the thinking process of the average normal human is in language of the native tongue, bolstered by mental imagery dealing with vision. A combination of these processes is necessary to good reading, and a lack of one or the other, or any impairment of the sensory organs, or a mental incoordination between the senses, present difficulties leading to the necessity for remedial reading.

This thought process then, which revolves around language of the native tongue, not only implies that there must be a complete coordination between the senses of vision and hearing in reading of print, or a coordination of the senses of feeling and hearing in the development of skill in reading Braille, but that there must be perfection of each. This does not discount the possibility of learning reading without hearing, or the reading of Braille without either sight or hearing, so well done by Helen Keller. Such instruction, however, is not to be found or required in teaching children with a slight defect of either vision or hearing in the average school room.

And herein in relation to the slight defect, lies much of the difficulties of the past which have created considerable misunderstanding and confusion: the necessity for an accurate diagnosis of so-called slight imperfections of these vital organs.

It is an accepted fact, and no longer theory, that a simple clinical test will not give an accurate medical diagnosis of either vision or hearing acuity, and thus cannot be accepted as dogmatic in the diagnosis of a reading difficulty. In the words of Dr. Edmund Prince Fowler, the eminent ear specialist, "Without precision tests.... fully 50% of attempted diagnosis are faulty as to differentiation of lesions, and of course quantitatively worthless, prognostically of little value, and therapeutically of little use."

This is particularly true of hearing. Most statistics regarding the number of school children with impaired hearing have been obtained with group testing equipment. While the results of such tests are satisfactory as far as they go, they do not go far enough. They are not enlightening for medical diagnosis and should be considered in light of their limitations when used for the purpose of diagnosis in educational problems. Those who have studied the physics of sound and understand the broad limits of human hearing necessary for a perfect understanding of language, are well aware of these limitations. Group tests do not cover the necessary range of hearing any better than an ordinary radio covers the range of cycles which can be utilized in radio transmission. To assume that a test of the intelligibility of vowels is adequate may be comparable to the assumption that because a radio can pick up KFI it should also be able to pick up short wave. If the parts necessary for short wave reception are not present, or have become damaged, then it may function perfectly through the broadcast range and not at all when short wave is desired.

The point can be best illustrated by supposing that newspapers were printed with the vowels in black, the nasals in green, and the

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consonants in red. A chart test of vision, using only black vowels or symbols, would be rather misleading as to the ability of the color blind to read a newspaper. Hearing tests, wherein vowels predominate as in the single numerals, may be just as misleading as to the acuity of all hearing necessary for perfect understanding of speech.

Hearing and sight are inherited abilities supplied by nature. Language heard by the ear, and the printed symbols of language must be learned. Science has developed better lighting and more readable print as an aid to reading. But we are little advanced over conditions of a hundred years ago in so far as hearing is concerned. Not only do we know little more about the human ear and how it functions than we did a century ago, but such limited knowledge is not widely distributed. We have added loud speaker or public address systems to our auditoriums as a public recognition of the need for better hearing, but the class room, where the basis of education is obtained, is in many ways inferior acoustically speaking to those of yesterday. There can be little argument to the effect that the increased noise of this era is not detrimental to facility of understanding class room instruction. Several scientifically minded people throughout the country are speculating on the theory that the increasing number of children with poor hearing, and the noise element, form a combination of handicaps which may in part account for the controversy between the "modernists and fundamentalists."

Beyond these is a greater detrimental factor opposing a full and instant comprehension of the spoken word, and therefore to be seriously considered in relation to the symbols of that word. The sense of hearing as found with the perfect organ, is sensitive to various sounds or vibrations to a varying degree of efficiency. For instance the sound 'aw' is the strongest in the English language, while the sound 'th' as in 'thin', is the weakest. Yet the section of the cochlea in the perfectly functioning ear is vastly less sensitive in the higher pitched and weaker 'th' range or portion than in the lower frequencies responsible for 'aw'. The unvoiced consonants which add so much to intelligibility, are far weaker than the nasals or the vowels. So, consciously or subconsciously we have developed our lives to offset this deficiency in our language. It is quite necessary for the best of hearers to watch the speaker's face in order that no key word be missed and the context therefore become meaningless. In spite of this defect in language wherein the key to the intelligibility of most words is within the least sensitive of the hearing range, many teachers will unintentionally add to the burden of children who depend upon speech-reading for assisting the hearing, by giving instructions from the back of the room.

Others have been known to stand with their back to a bright window, thereby preventing supplemental speech-reading on the part of their pupils. These habits may not of themselves cause poor scholastic work, but they certainly do not add to or tend toward better.

The majority of hearing examinations are within the range where the hearing is nearly always the best, even with severe nerve deafness. I have examined many children who can hear a vowel as well and as clearly

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as any normal hearer, but who cannot hear in the higher frequencies even when the full power of the audiometer is given against the ear. They may require 100,000,000 times as much power to hear frequencies in 'th' as in 'aw'. Thus the combination of strong sound vibrations and the more acute portion of the average human ear, naturally lead to results which cannot be comparable to a thorough test of the entire range of hearing. Such results are entirely erroneous and misleading and make it impossible to correctly evaluate any kindred deficiency in light of an auditory defect. To assume that a low frequency yet strong vowel is comparable to a weak consonant is not in keeping with the natural law of physics.

It would seem, therefore, that defective hearing, even of a slight nature necessitating precise testing to determine, may be one of the reasons for many children failing at reading. The small percentage found to have defective hearing through use of group testing equipment will not approximate the 14% having difficulty with reading. When we consider, however, the much larger percentage of those with a high frequency loss in the consonant range, we find it entirely within the realm of possibility, and largely within the realm of probability, that hearing--good hearing—is important in the acquisition of good reading ability. To assume that there should be a normal development in reading of language when there is a hidden defect in the mechanism of hearing the language in the first place, is not sound.

In kindred fields of education where hearing is recognized as of paramount importance, such as correct speech, there is a very close relationship between defectives in these subjects, or abilities, and defective hearing. It has been found that as high as 85% of speech defectives have impaired hearing, and 73% of those in remedial reading classes have an imperfect auditory sense as measured by scientific methods.

These unusually high percentages would seem to imply that hearing is of great importance in both speech and reading, and improvement should depend largely upon the degree to which hearing deficiency can be overcome.

Throughout the educational world interested in the deaf and the crippled of hearing is the recognized fact that imperfect hearing is more often than not accompanied by other handicaps directly traceable to the hearing loss. The deaf, unless given a highly specialized type of training, do not learn to speak at all and must depend upon signs. The crippled of hearing speak incorrectly because they have not heard well. Of recent years we have learned much regarding speech in its relationship to hearing and can now evaluate speech handicaps by a careful diagnosis of the hearing curve as disclosed by audiometric examination. To offset the deficiencies of speech attributable to auditory deficiency, the auricular method of training has been developed wherein the student hears through ear-phones with the sound amplified or magnified at the points of greater deficiency. This magnified sound,

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combined with speech-reading, enables the student to overcome the hearing deficiency to a marked degree. By adding a microphone to this type of instrument the student can hear his own voice and thus correct any defect of pronunciation. The combination enables the speaker to overcome his hearing deficiency and kindred handicaps far more rapidly than by any other known method.

On the basis of results as experienced in speech correction, it is possible to build an argument supporting the theory that a correction of an auditory defect may in turn improve reading ability. Two different means for accomplishing this are offered. First is therapeutics by medical treatment or surgery, or by correction of the diet, depending solely upon the type and degree of the defect and the length of time which has passed since the deafness cause was experienced.

The second is amplified sound. Proper placement in the class room will often be sufficient. A change of teachers frequently is found to accomplish wonders with a poor reader. Usually this is attributed to reasons other than those directly traceable to the auditory, with no consideration given to the fact that the difference in the tonal quality of the voices, the clarity of articulation, together with the carrying quality of the voice, may be the reason. The reverse is also possible, wherein a child with passable progress in reading begins to fail with a change of teachers. This phase is not confined to reading alone, but will apply to all instruction where hearing is important.

Stronger and clearer sound, unmasked by extraneous noise, whether by ordinary voice or through amplification, often results in marked improvement throughout the entire schooling. This recognition of the necessity for greater intelligibility is the secret of the success in the education of the hard of hearing in special schools. Teachers in such schools are thoroughly aware of the problems developed by defective hearing.

An illustration of the effectiveness of amplified sound can be given in the case of Duane, age eleven. This child was brought to the Children's Hearing and Speech Clinic, in Los Angeles, for my diagnosis. His hearing test disclosed a very serious nerve type of deafness, never before suspected, wherein the high frequencies could hardly be heard even when magnified a million fold. His schooling totaled four months in all because an examiner had declared him to be a low grade moron. A recording of his voice made at the time of his enrollment in our classes is impossible to understand.

Duane was coached in phonics plus pictures, always with a headphone and his microphone, and with the teacher using a necklace microphone. After five lessons of one hour each, he was able to read through the pre-primer, much to the happy amazement of his mother. His mental capacity was found to be normal for his age when carefully examined by a skilled psychologist, who did not make the very bad mistake of attempting to grade him on the basis of the Binet test. He was able to grasp

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a thought very quickly once he could hear clearly. His speech developed so rapidly that at the end of ten lessons a new recording of his voice is easily followed. He is now in school and doing well.

It is of interest to note that his ability to apprehend the language symbols improved with greater rapidity than his ability to correct his speech. This can be explained in part by considering that because of his lack of reading ability he had no bad habits to correct, while his poor speech habits were deeply seated. Some may contend that the quickness with which he grasped reading was due to his age level learning lessons designed for a five year old. There is much merit in such a contention, but it must be remembered that we had demonstrated the fundamental reason why he had failed to read, could not talk with any clarity and had badly fooled a school psychologist as to his mental condition.

Speech and reading are so inter-related as to be almost inseparable, as before mentioned, with the totally deaf. An illustration of this is a woman missionary who, having much time on her hands, took up Latin in order that she might read and write in that language. She became very proficient at both, but never having heard anyone speak Latin she could not speak it well enough for Latin scholars to understand a word she said, nor could she understand them, though they could correspond freely in Latin. This is somewhat the experience of the deaf who have been educated to read and write. They can read, but they seldom speak well, and if compelled to depend upon sound alone, unsupported by speech reading, would be hopelessly handicapped.

During the past few years considerable thought has been given to visual education, particularly in elementary schools. Strangely enough the auditory sense remains the principal gateway to the mind in so far as higher learning is concerned. The lecture platform has not yet given way to motion pictures to any great extent, and the text-book, while requiring vision for apprehension, is but a means for the portrayal of auditory thought.

The principal weakness of the auditory thought process in the acquisition of an education is due to its transitory nature. Once it is spoken it is seldom repeated and requires concentration even by those with no defect in the mechanism of hearing. The printed thought, however, can be referred to, making it possible for the slow thinker to grasp it or to remember by reading it over again. This weakness of the auditory thought process through hearing has given place to one of the fallacies of common belief that the eye is many more times as effective as the ear in learning. When we consider the eye as only the tool by means of which we translate word symbols into an auditory impression in exactly the same result we would have obtained by hearing, this belief seems to fall of its own weight. The blind, with no vision at all, seem to be able to grasp a thought with a facility equal to that of the seeing. Their comprehension is based entirely upon hearing, or

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may be somewhat supplemented by the limited number of books and magazines printed in Braille. Such printing, it must be noted, is not read by vision but by feeling. Should there be a more perfect memory for the blind through reading Braille than from that which is heard directly through the ear, the same argument would imply that the sense of feeling is more effective in the learning process. Certainly it cannot be successfully contended that the imagery with which the blind develop a mental picture of the action or description portrayed in Braille reading is the more important. Having had no vision such a mental picture could not be accurate. The eye can be more easily substituted for in the educational program than the ear.

Visual education has a broader field for development of its unexplored potentialities than that of hearing, inasmuch as its part in ordinary learning has been almost negligible if we exclude reading. But at its best it must of necessity be restricted to the classroom or to groups, while the printed word can be available anywhere at any time.

By interpreting the reading process as merely a supplement to auditory thought, or thinking in language, and then classifying all knowledge into two categories: that which was learned exclusively through vision and that which was learned through hearing, we find a strange result. Perhaps not one per cent of the sum total of our knowledge is based solely upon vision. History of the past, prognostications of the future; the broad panorama of current events may be understood with clarity only when portrayed in speech or the symbols of speech of the average person. We read or hear with greater understanding of a thing or event we have seen because our knowledge is then complete, supported as it is by the views or opinions of another observer. But our knowledge of our world cannot be complete unless it reaches our intelligence in the form of auditory thought. Of a certainty we cannot describe history and its meaning, prophesy the future, or intelligently review current events without language, either printed, finger-spelled, or spoken.

This is not to be considered a reflection upon visual education, particularly when used in illustrating important elements of some special type of education. Nor should it be considered a reflection upon the value of visual thought. But inasmuch as we are concerned with difficulties in reading of printing or writing, we must estimate the task in the resulting thought process rather than by the tool through which the thought is grasped. And therefore, inasmuch as all normal thought which can be readily passed on to another person is fundamentally language, spoken or printed, the tool with which language is acquired is of the greater importance.

The use of the motion picture or similar means for supplementing educational training should not be criticised unless such visual education drastically excludes other vitally important methods for the intellectual development of youthful minds. They have their place but it is a limited one. A picture but broadens the range of visual knowledge,

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and as a supplement to reading it has its proper place in illustrations, but it can never replace or equal reading as a means for the acquisition of a well-balanced, well-rounded education. A good reader has obtained the basis of an education in any line depending upon the printed word of a language he can read.

Any lack of coordination between the eye and the ability to read a language which can be spoken would seem to indicate an organic difficulty. This can be of two different types: either there is a lesion of the brain in one or both or between the two parts responsive to vision and hearing, or there is some difficulty with the function of the eye or ear. The former requires expert medical or perhaps psychiatric examination while the latter demands accurate and scientific measurement of acuity, combined with an accurate diagnosis. There may be a combination of the two defects.

Minor defects must be considered. Many children can see the printed word, but only under strain. Many children can hear the voice, but only under strain. Neither can be expected to keep the pace of those with no defect at all without falling down somewhere. The added strain of trying to see or hear that which is not clear will find outlet in excessive fatigue and a subsequent disinterest in school work. This may be particularly noted by a lack of attention.

The large number of children in the average school room who have a defect in hearing within the higher frequencies, which may or may not be a nerve defect, suggests one possible solution to much of the entire problem of education.

Subjects requiring close attention and thought should be undertaken during the morning hours, leaving such subjects and the arts for later in the day. Such a change would not decrease the efficiency of those who do not become fatigued, but should cause an improvement in the grades of many who have heretofore been below average.

It should be noted, however, that if the heavier subjects are given during the morning when minds are fresh, there may be the same line of demarcation between the good readers and the poor, for a clear, fresh mind will be at its best earlier in the day regardless of any physical handicap or lack of it. There are children who are more alert, and show more energy in the afternoon than in the morning, but this is not normal. It is a danger sign and should be evaluated as such.

Proper diagnosis and isolation of the cause of any variation from the normal must precede therapeutics, regardless of the subject. No problem can be solved until it is recognized for what it is. It then becomes clearly evident that in order to understand the "whole child", the whole child must be considered. A hidden defect is not less important because it is hidden, but rather the reverse. The war has proved this. It becomes of little worth to protect a place from a raid by sea if the attack should come from the sky. A bomb loses none of its

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effectiveness because the plane which drops it is invisible.

In summarizing the importance of hearing in learning reading, we come face to face with the fact that the written or printed symbol is largely phonetical, and represents a group of sounds made when language is spoken. In this respect our English language differs in respect to purely picture printing or writing such as Chinese. It is evident that if the difference between letters of the alphabet are phonic, any difference which makes it difficult to distinguish between them might be at fault. If tests show that the vision is normal, then it is indicated that hearing acuity must be considered.

Language and printing are the foundations upon which civilization are based, and without them man would be on a lower plane with other animals. And inasmuch as there is no question as to the importance of hearing in the learning of language, it must follow that the understanding of symbols representing language cannot be acquired without special instruction.

Differentiations between sounds depend largely upon the normal functioning of the ear and it is therefore impossible to assume correctly that failure to read properly is not caused by an auditory defect when such an assumption is not supported by a scientific examination.

Thorough examination of all poor readers is therefore indicated. Proper seating in the class room and a clear and uninterrupted view of the speaker's face--whether teacher or reciting pupil--should be arranged for all those who show any loss of hearing, particularly in the higher frequencies. Blackboard work should be written and then explained while facing the room; not explained while being written.

Every facility which can be used toward the end that instruction is better understood will inevitably result in better work and better grades. Hearing cannot be taken for granted. There are too many complicating circumstances which by their very nature have led many people into a maze of misunderstanding about the problem of hearing, until today it stands among the foremost of all problems yet not fully understood, be they medical, educational, or sociological.

## MATERIALS AND METHODS SINCE THE NEW ENGLAND PRIMER

John A. Hockett, Associate Director of Teacher Training, University of California at Los Angeles

### The Teaching of Reading in Colonial America

The New England Primer, it is claimed, "taught millions to read and never a one to sin." Both of these objectives, it would seem, were achieved at a price. Certainly the ordeal of learning to read was a long and arduous one. Fear of death and eternal damnation was relied upon to inhibit the tendencies to sin so strongly implanted in colonial children, whom Jonathan Edwards called "young vipers and infinitely more hateful than vipers to God." The New England Primer first appeared about 1690, being similar to the Protestant Tutor published in England some ten years earlier. These books were by no means entirely new at that time, however. As far back as the Middle Ages, such little books had been used as simple manuals of devotion, containing as they did the Ten Commandments, Lord's Prayer, Apostles' Creed, a few psalms, and the catechism. To render them usable as textbooks in reading, a few introductory pages were added. These pages contained the alphabet in several forms; easy syllables for children such as ab, eb, ib, ob, ub; and three pages of words of one syllable, and of two, three, four, five, and six syllables. Other selections include four pages of rhymed couplets beginning with "In Adam's Fall, We sinned all," verses for little children, the burning of John Rogers, the catechism, and "Spiritual Milk for American Babes, Drawn out of the Breasts of both Testaments for their Souls Nourishment, by John Cotton."

This little book of eighty small pages, approximately three by four inches in size, was throughout the eighteenth century the dominant textbook in beginning reading in America. It went through innumerable editions to reach a grand total of some three million copies.

Method was as bleak and forbidding as content. The child was drilled at length upon his letters, until he could name them forward and backward and could pick them out anywhere on the page. Sometimes little devices were used to entice children to the study of letters. The letters might be written on the "back side of a pack of cards," or engraved on a piece of ivory which could be thrown on the table to expose one letter on top. When the alphabet was mastered, the process was repeated with the syllables, beginning with ba, be, bi, bo, bu. After weeks, or months, with letters and syllables, the child was introduced to words. These he attacked by naming the letters, or spelling out the word, and finally by pronouncing it. This led into the limited and difficult content of the Primer. After long and painstaking study in the Primer, the child was permitted to read in the Bible itself. His only technique for mastering new words was through spelling. It is obvious that spelling and reading were taught together, and quite understandable that many of the books for beginners were called spellers.

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Young scholars were further handicapped by the inefficient methods of their teachers. Instruction was individual, each child being called to the teacher's desk to recite his lessons and receive praise or punishment for his efforts. Teaching consisted in the assignment and hearing of lessons, not in helping the pupil learn. The teacher's role did not include the giving of information or the carrying on of discussions with pupils. It is small wonder that discipline and punishment were prominent in such a dismal, uninspiring situation.

Noah Webster and his Speller

As the Primer was the dominant reading textbook of the Eighteenth Century so Noah Webster's Blue-back Speller became supreme in the early part of the Nineteenth. Webster taught school for several years after graduating from Yale in 1778. In 1782 he wrote his spelling book which was published the following year. This book was the "First Part" of a three-part project entitled A Grammatical Institute of the English Language and did not until later assume the title of "The American Spelling Book." It was by no means the first of the spellers, Dilworth's A New Guide to the English Tongue having gone through fifteen American editions in the thirty-five years preceding the appearance of Webster's volume. Webster's speller began with an analysis of the English language, followed by the alphabet and numerous lessons devoted to two and three-letter syllables. The 170 pages of the speller are organized into approximately 150 lessons consisting of lists of words classified by length and pronunciation, with assorted and unrelated sentences interspersed. While as difficult and didactic as the Primer, the Speller is avowedly a secular lesson book, whereas the Primer was wholly religious in its aim and content. The Speller served to standardize spelling and the use of English in the young American nation and did much to popularize correct spelling. It also promoted social activities in the form of spelling bees both in school and as social events in the community. It was a Blue Back that the Judge held in his hand at the famous spelling bee described in The Hoosier Schoolmaster.

With the establishment of the United States, materials and methods in reading were modified to assist in creating national strength and unity. Materials were selected which would develop loyalty to the nation and inculcate the ideals of good citizenship. Emphasis was placed on correct pronunciation and enunciation of English in order to counteract the development of dialects. Elocution and declamation were considered important in the life of a democratic state. Patriotic, historical, literary and informational selections by American authors, stressing aspects of American life, found their way into numerous textbooks. Moralistic materials took the place of religious selections. These emphases are indicated in the titles of popular textbooks of the early 1800's. Witness: The Moral Instructor and Guide to Virtue and Happiness by Jesse Torrey, The North American Reader by Lyman Cobb, The Columbian Orator and The American Preceptor by Caleb Bingham.

Learning to read was still a long, laborious process in the first

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few decades of the Nineteenth Century. Mastering the alphabet was still the first step. Webster stressed the importance of mastering the various sounds of the letters instead of learning merely the names. He not only presented in the front of his speller an analysis of English sounds, but also grouped many syllables and words together because of similarity in pronunciation. Much stress was placed upon correct and fluent oral reading at this time.

The Graded School and McGuffey

Further significant changes occurred in the reading situation about one hundred years ago. Pestalozzi's influence led to interest in sounder psychological methods of teaching. Horace Mann, in the early forties, contrasted the skillful teaching of beginning reading he had witnessed in Prussian schools with the inefficient and boring practices common in America. The newer methods placed more emphasis on phonetics and on words as wholes. The first reader to advocate the word method of teaching was Josia Bumstead's My Little Primer, published in 1840. Bumstead contended that it was "more philosophical, intelligent, pleasant and rapid" to begin with "familiar and easy words, instead of letters." The word method had been advocated by Samuel Worcester as early as 1825, but without practical effect. Bumstead's primer began with lists of words familiar to children, omitting the usual introductory pages devoted to the alphabet and syllabarium. Some teachers adopted the new method with enthusiasm, but the great majority continued to use the alphabet method, although more stress was placed on the sounds of the letters than on their names.

Various new readers appeared, by far the most important being those written by William Holmes McGuffey. The first four books of the series were published in 1836 and 1837. A fifth and sixth reader followed in a few years. William McGuffey, the son of an Indian scout, had grown up in a frontier region of Ohio. He knew the people and the nature of life on the frontier. Like Lincoln he walked miles to borrow a book and secured his education by working his way. He taught school after completing the course at Washington College in Pennsylvania, and was later given a position at Miami University at \$600 a year. McGuffey pioneered in making reading materials fit the child's needs. He tested every selection and every lesson on real children. He selected pictures that children would like and that would illustrate the meanings he sought to teach, pictures of children at play, of pets, of animals. He coined appealing titles such as, "The Discontented Pendulum," and "The Money Amy Didn't Earn." He wrote stories designed to persuade children to be helpful to their parents, patriotic to their country, reverent to God, honest with their friends, kind to animals. Many stories dealt with the experiences of children in pioneer communities. There were innumerable selections from literature. Mark Sullivan has said that nine out of ten average Americans received their entire literary education from McGuffey's readers, that "he had a large part in forming the mind of America." Surely the range was great. There were selections from the Bible, fables by Aesop, poetry by Whittier and Longfellow, selections from Julius

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Cesar and Hamlet, immortal words of patriotism by Patrick Henry and John Adams. The young student became acquainted with characters as varied as Hector, Enoch Arden, Lochinvar, and Shylock.

This was the first series of readers to include a carefully-graded book for each grade of the elementary school. The primer began with the alphabet, followed by a picture alphabet, but was composed chiefly of lessons consisting of words to spell and short, unrelated sentences to read. The sentences dealt chiefly with animals and children, provided for considerable repetition of words, but was by present standards largely dull and senseless. The sentences were designed and grouped to emphasize certain phonetic elements.

The series was truly a best seller. One hundred twenty-two million copies were sold, more than of any other series in all history. It is estimated that between 1840 and 1900 half of the children in the United States used these readers. For at least three generations these books not only taught youngsters to read, but brought them moral instruction, formed their tastes in literature and language, and helped unify scattered pioneer communities in a common American culture.

#### Culture through Literature

Moving on to a later period, we find new influences at work during the last quarter of the Nineteenth Century. There was dissatisfaction with both the quantity and quality of work accomplished in reading in the public school. As the result of a little investigation, President Eliot of Harvard charged, in 1890, that an ordinary high school graduate could read aloud in less than fifty hours all of the material which an elementary school pupil normally read in six years of schooling. He condemned most of the school readers as trash, and urged that good literature be substituted for both the "ineffable trash" and the mere scraps of literature found in the readers. Others took the same view as Eliot. H. E. Scudder published a book in 1888, in which he urged that the reading of a literary classic was in itself a liberal education but that the "fragmentary reading of commonplace lessons in minor morals," which made up the principal contents of readers was a sad waste of the mental powers of the young.

This point of view, of course, was not universally accepted at once. The Committee of Fifteen of the National Education Association on elementary education recommended the usual method of using school readers, although Superintendent Maxwell of Brooklyn, New York, in a minority report, disagreed and urged the study of complete literary classics.

Herbart had stressed the importance of literature and history in developing character, and his influence was strongly felt in America in this period. Charles McMurry, a prominent Herbartian, published his Special Method in the Reading of English Classics in 1903. He commended the increasing tendency to use material of literary value for school reading

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including such selections as "Hiawatha," "Lady of the Lake," "Rip Van Winkle," and "The Courtship of Miles Standish." "Mother Goose" and other children's classics were used extensively in the lower grades. There is no doubt that the closing years of the Nineteenth and the early years of the Twentieth Centuries saw much emphasis on the cultural values of reading.

New techniques for creating interest and appreciation in literature were also developed at this time. These were rather formal, involving much dissection of literature and emphasis on definitions, but nevertheless represented an attempt to break away from the earlier stress on elocution.

New methods of teaching beginners to read were also devised. One of these was the sentence or story method, an outgrowth of the word method, which by this time was widely accepted. Using the story method, the teacher would read or tell a short story to her pupils until they knew it by heart. They would then "read" it together, proceeding to break it down or analyze it into its various phrases and words. A moderate use of phonetics would accompany the study of words.

Another method greatly stressed phonetics. Since some of the pupils taught by the word method revealed a lack of independence in attacking new words, it was believed necessary to give more phonetic training. Elaborate phonetic methods were developed, some analytic in character, others synthetic. In one of the synthetic methods it was insisted that the child start with the sounds of letters and be given long and careful phonetic preparation through drills and exercises before he attempted to read the simplest sentence. He was to rely on phonetics exclusively, with no reference to pictures, to the story told by the teacher or other aid. The sponsor of this method, however, made a definite and hitherto largely unattempted appeal to children's interests in the phonic drills suggested. The letter sounds were connected with sounds and experiences familiar and appealing to children.

Several well-known series of readers were produced in the late nineties and early nineteen-hundreds. The Ward Rational Method, developed by the school superintendent of Brooklyn, was published in 1894. In this series an effort was made to combine the word method and the phonetic method. There was an increase over earlier books in the number of illustrations, and most radical of all, two full-page colored illustrations in the primer. The Beacon readers, issued in 1912 and succeeding years, emphasized several phonetic features, including careful distinction between phonetic and unphonetic words, much practice on the short vowel sounds, and accurate blending of consonants and following vowels. The Gordon Readers were another popular series. The increased emphasis on literature was revealed in numerous series. Just before the close of the century, there appeared the "Graded Literature Series" and "Stepping Stones to Literature." Some years later the emphasis was carried further in such readers as Free and Treadwell's "Reading-Literature," "The Aldine Readers," "The Story Hour Readers," Baker and Thorndike's "Every-

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day Classics," and the Elson Readers. During the first three decades of the present century, young children were generously supplied with such stories as The Little Red Hen, The Gingerbread Boy, Three Billy Goats Gruff, and many other simple or simplified folk tales as well as Mother Goose rhymes. Older pupils read myths, fairy stories, selections from English and American literature, some stories of child life and nature, and some informational material.

The Scientific Movement

At this point it is necessary to consider a new and extremely significant movement that has increasingly affected materials and methods in reading since about 1910. This is the scientific study of reading processes and problems. The beginnings of such studies are noted in Europe as early as 1850. Starting about 1885 in America, Cattell, Erdman and Dodge, and others investigated some of the processes involved in reading. They concluded that ordinarily reading involves recognition of words or even phrases rather than letters, and that the nature of the material and the reader's purpose determine whether he recognizes words or phrases as wholes or whether he must analyze words into their parts in order to comprehend the material. Scientific study proceeded slowly until 1910, after which date interest in such study grew apace. For three or four years following 1910 investigations were concerned with the respective values of different methods of teaching and with the amount of reading done in different schools. The development of standardized tests in silent reading, in 1915, provided a new tool and a strong impetus to further and more extensive investigation. From 1915 to 1920 there were many studies of achievement in reading, concerned with the comparison of different methods of teaching, comparing oral and silent reading, and isolating the factors and conditions that led to success or failure. Important laboratory investigations of the physical and psychological processes involved in reading were vigorously prosecuted during this period, notably the eye-movement studies at the University of Chicago by Buswell, Judd, and Gray. The yearbooks of the National Society for the Study of Education in the later 'teen years both reflected and stimulated the increasing interest in scientific studies of reading. The reports of the committee on economy of time in education were significant.

Stress on Silent Reading

One result of the first decade of vigorous scientific study of reading was a strong shift of emphasis from oral to silent reading. Research had revealed marked differences in the processes of oral and silent reading, had demonstrated the superiority of silent reading, and had suggested new methods of teaching and measuring silent reading. Simultaneously there was emphasis on the practical values of reading for information in contrast to the earlier accent on the reading of literature for cultural enrichment. These new objectives were reflected in the titles as well as the contents of the new readers. Witness: Lewis and Rowland's "The Silent Readers," Horn and Shield's "Learn to Study Readers," Buswell and Wheeler's "Silent Reading Hour," and "The Progressive Road to Silent

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"Reading" by Ettinger and others. The books published in the early twenties contained a large amount of informational material and devoted much space to comprehension checks and exercises.

The new methods of teaching silent reading included stress on both speed and comprehension. Children were required to reveal comprehension through a great variety of responses, involving for older pupils all sorts of written exercises and tests, and for the primary grades, seat work, verbal responses and physical activities. Pupils were stimulated to read for speed by working against time limits and by attempting to minimize articulation. Phonetics was introduced early and stressed throughout the primary grades. Some silent reading enthusiasts advocated no teaching of oral reading, but the majority accepted facility in oral reading as an important but secondary objective. Scientific study had revealed the nature and extent of individual differences, with consequent attempts by teachers to discover and remedy the specific difficulties of boys and girls. Grouping of children in accord with measured abilities or difficulties came into practice. The necessity of educating teachers in the various new techniques led not only to the publication of numerous professional books but also to the elaboration of teachers' manuals for each series of books. These came to include specific directions for teaching each lesson or page in the readers as well as matters of general usefulness in teaching reading. Other new materials included flash cards of words or phrases and phonic charts.

In 1925, Gates published the results of a study of methods in beginning reading recommended in twenty-one series of readers issued in the preceding decade. He found universal emphasis on phonetics, most of the twenty-one systems introducing phonetic study within the first two weeks, and several of them advocating enormous amounts of drill in phonetics. He characterized the dominant method as one in which chief reliance in the development of word recognition techniques is placed upon formal exercises extrinsic to the actual process of reading in the ordinary sense. His analysis of the contents of primers revealed the following types of material as most common: stories about animals, 24%; folk tales, 23%; miscellaneous stories, 19%; stories based on Mother Goose, 16%; Mother Goose and Old Nursery Rhymes, 12%.

#### Broad Objectives and Eclectic Methods

In 1925, also, appeared the significant report of a national committee on reading as Part I of the National Society for the Study of Education's Twenty-fourth Yearbook. This committee formulated the basic objectives of reading instruction as threefold: (1) The provision of rich and varied experience through reading; (2) the development of strong motives for, and permanent interests in, reading; and (3) the development of desirable attitudes and effective and economical habits and skills. This report as a whole reflected a broad and balanced grasp of the various essentials in a sane and adequate program of reading instruction. Its recommendations carried great weight, strongly influencing

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professional books, courses of study, and reading books appearing after 1925. We may consider the most modern period of reading instruction as beginning with this report.

Scientific study of a great variety of reading problems has continued with increased momentum to the present, with significant, although perhaps less startling results, than was the case a bit earlier. There has been a very gratifying improvement in both methods and materials since 1925, especially since 1930.

In the past fifteen or twenty years there has come widespread acceptance of a broader conception of reading objectives than obtained in any previous period. Much effort has been devoted to the development of a sane, balanced program of instruction, free of biases and overemphases on certain methods or objectives to the neglect of other equally important phases of the problem. There has been an eclectic tendency to use any and all methods that could be scientifically justified, and to use them in such ways and combinations as to produce the most effective results. There has been a tendency to work for the simultaneous attainment of all of the basic objectives. It is no longer necessary for a child to spend long weary hours, and even weeks and months, mastering the mechanics of deciphering words before he can enjoy the pleasures of actual reading. Modern methods make possible pleasure and interest in the reading of sensible, appealing, story materials from the very beginning. No longer are the primary years devoted to the process of learning to read, while reading to learn is postponed for the intermediate and later grades. The child is taught to use simultaneously the various techniques of word and phrase recognition, and sentence and paragraph comprehension, so that he rapidly achieves facility, accuracy and independence in reading.

Not only is there an attempt to achieve integration in the use of specific reading techniques, but the teaching of reading has come to occupy a wholesome place in an integrated school program of varied activities and experiences designed to further the complete development of boys and girls. Reading serves to extend and enrich the actual, here-and-now-experiences of young people, at the same time that they are mastering its processes. Conspicuously promising are recent attempts to adjust the first steps in reading to the maturity level and experimental background of young children. The concept of reading readiness, and efforts to introduce reading only when each child is physically, mentally, socially, and emotionally ready for this important event represent significant progress.

Not only in the initial stages but throughout the period of reading instruction is there definite progress in adjusting methods and materials to the specific needs of individuals. Methods of diagnosing the peculiar difficulties or needs of each child, and of preventing or remedying deficiencies before they become serious handicaps are important recent developments.

Practice in the teaching of reading is rapidly capitalizing upon

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the extensive scientific achievements of the past thirty years.

Recent improvements in materials are as marked as in methods. Readers of 1940 differ in several important respects from those of 1930. Books for beginners are much simpler, making the introduction to reading more gradual and more successful. The vocabulary is carefully controlled in all recent books, so that the child receives much practice in the actual process of reading interesting material with a minimum of difficulties and interruptions because of unknown words. Simplification has been achieved, however, without loss of appeal to the child's interest. Recent books are markedly more attractive, in format, size and style of type, and above all in the character of illustrations. Since about 1935, in the lower grade books especially, the illustrations have become positively beautiful. They are drawn by artists, and not only adorn the books but make a definite contribution to the content. Their colors and artistic qualities make a universal appeal. The amount of material supplied for each grade and each child is vastly greater than ever before. The child not only learns to read much more quickly and easily than in any previous period, but he has the pleasure and value of reading many books where formerly one was read.

New types of materials have been developed. Workbooks in reading were introduced about fifteen years ago, and have enjoyed extensive use. These are of two general types: those made to accompany a specific set of readers, and those designed to be used independently or in connection with any reading series. If carefully designed and skillfully used, workbooks may serve a real purpose. If used indiscriminately by a teacher possessing little grasp of the essentials in teaching reading, their value may be slight or even negative. Teachers' manuals have become helpful, professional books in recent years. Some of the best authorities in the field have contributed to the guide books which now accompany each series of readers. There are many other sources of professional help, also. Never before have there been so many excellent professional books, yearbooks, and course of study bulletins as at present. In fact, there were virtually no sources of help of this nature until about fifty years ago. The past ten years have witnessed a rapid multiplication of small reading booklets devoted to stories or informational material on a specific topic such as boats, airplanes, colonial life, coal, or the newspaper. These are carefully written, well-illustrated contributions to the enrichment of children's experiences, highly useful in their study of the natural and social world in which they live. There is a tendency in the readers, too, for information and stories on a given topic to be grouped together in a section of the book, thus being useful in the study of that aspect of life.

Development of Literature for Children

Before bringing to a close this brief survey of materials and methods in reading, something must be said of the spectacular development of children's literature in recent decades. One should begin, of course,

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with John Newbery, that versatile and fascinating personality who first sensed the need of books written for the enjoyment of children and who set about with vigor and enthusiasm to supply the need. He is rightly called the father of children's literature, and the opening of his little bookshop in London in 1744 was an event of importance to all children since that time. In spite of Newbery's influence, didactic writers of gloomy stories of young saints and sinners continued to flourish throughout the Eighteenth and far into the Nineteenth Centuries. Four prominent moralistic writers might be mentioned: Mrs. Barbauld, Thomas Day, Maria Edgeworth, and Martha Sherwood. Their unbelievably brave, sensible, and diligent young heroes always gained the better of their lazy, careless and cowardly opponents. Nor did the exemplary heroes ever fail to give credit to their virtue for their unfailing success. The writers just mentioned were English authors, for a general tendency in America until 1825 was to reprint English books, even those descriptive of English customs, games, birds, and flowers.

Samuel Goodrich, who wrote under the pen name of Peter Parley, published his Tales of Peter Parley about America in 1827. This was the first of more than one hundred books written by this first major author of children's books in America. Contemptuous of the nonsense of Mother Goose and fairy stories, Goodrich presented information on history, geography, science, biography and travel for the nourishment of young minds. Although his books were prosaic, they were simply written, and the innumerable journeys of Peter did provide sufficient adventure for boys and girls to make his writings widely popular. More than seven million copies were sold, and many imitations written.

Another prolific writer of the Mid-nineteenth Century was Jacob Abbott, a mathematics professor, whose series of books about Little Rollo, Lucy, Jonas, and Franconia had a wide appeal. While his heroes were remarkably wise and sagacious, they did go places and do things. They represented a greater appeal to children's interests than the Parley books, and also had a moral effect in their presentation of the activities of a wholesome, everyday life.

The Grimm brothers in the twenties, and a bit later, Hans Christian Andersen, restored some of the prestige of the fairy story in an age devoted largely to instructive and character-building stories. Edward Lear, in England, issued his first Book of Nonsense in 1846, followed by another in 1871.

Varied contributions to children's literature appeared in the 1860's. Several writers, abandoning the emphasis on instruction and morals, produced much vivid melodrama of the Nick Carter type. In reaction to the cheap and hated dime novels, William T. Adams, a Sunday School superintendent, published more than a hundred volumes under the name of Oliver Optic, and Horatio Alger, Junior, a Unitarian minister, began his endless series of tales of humble boys who through perseverance, pluck and fortunate coincidences achieved fame and fortune. Both series were highly moralistic and untrue to life. The Sixties also saw the appear-

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ance of Lewis Carroll's immortal Alice in Wonderland, Louisa May Alcott's classic and long-time favorite Little Women, and Mary Mapes Dodge's Hans Brinker. Most writing for children at this time was filled with sentimentality and moral self-consciousness.

The same trends were evident throughout the Seventies. Many writers continued to hide their identity behind such nom-de-plumes as Uncle Jasper, Aunt Nellie or Pansy. Some titles from this period are : Little Prudy Keeping House, Little Wideawake, The Little Home Missionary, Little Johnny, the Idiot Boy. Among new authors were Susan Coolige, J.T. Trowbridge, and Thomas Bailey Aldrich. The latter's Story of a Bad Boy depicted the normal boyish pranks of a real person--himself. A few years later, 1876, Mark Twain's Tom Sawyer appeared, to the delight of young and old, with its brilliant psychological insight into the boyish mind. Before leaving the series books, a few other series should be mentioned, including the Little Pepper series, the Katy books, the Bessie books, the Elsie and the Pansy books, as well as The Flaxie Frizzle and the Little Colonel series. Among illustrators of children's books should be listed Randolph Caldecott, Kate Greenaway, and somewhat later Howard Pyle who was both illustrator and author of such books as Men of Iron and The Merry Adventures of Robin Hood.

From 1880 to 1900, emphasis on religion and morality became less prominent, while materials dealing with nature and with life in other countries assumed increased importance. Folk literature as well as informational material became more prominent. As the end of the century approached, references to science and industry multiplied. The telegraph, telephone, oil wells, bridges, and railroads began to appear more prominently in stories as well as in informational selections. The interest in science, invention, and industrial development has expanded and continued to the present time.

There is not time to enumerate the names of authors or to catalogue even the types of books written for children in the past half century. The field has expanded at an amazing rate. Books of rare charm and beauty have been written upon almost every conceivable subject to inform and delight the youthful reader. High standards of excellence have been set by authors, illustrators and publishers. "Nothing but the best is good enough for the child" has assuredly been the motto of the makers of children's books in recent years.

One event which has helped stimulate the achievement of ever higher standards in children's literature should be mentioned. At the 1921 conference of the American Library Association, Mr. Frederic G. Melcher, the founder of Children's Book Week, proposed that a medal be presented each year to the American author who had produced the most distinguished book for children during the preceding year. Just twenty years ago this summer, the first Newbery Medal was awarded to Hendrick Willem Van Loon for The Story of Mankind. The twenty authors and books similarly honored since 1922 are only illustrative of the vast achievement in this field in the space of two decades.

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The Caldecott Medal was originated and first awarded in 1938 for the most distinguished picture book for young children. Animals of the Bible by Dorothy Lathrop received the first award.

Teachers and parents are often disturbed that boys and girls consume with such avidity the millions of so-called Comic Books issued annually. Poor in format and illustration, mediocre in content, these "funnies" nevertheless grip children's interest with their rapid-fire adventure. It may be that boys and girls prefer these modern dime novels to the wealth of excellent children's literature that has been written for them. It may be that the best in literature is not known and readily accessible to Tom, Dick and Henry and their sisters. In either case, the problem is an educational one--that of building an acquaintance with, and a taste for, the best.

The truly significant developments of recent years in methods, textbooks and children's literature should encourage us to face the future with confidence in still greater achievements.

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## INABILITY OR DISABILITY AS ASSOCIATED WITH THE READING PROBLEM

Catherine Kennedy, P.H.N., Long Beach Public Schools

Today's watchword is defense--and during this critical period there must be no let down in the safe-guarding of the health of our children. Defense of the vision and hearing of our children implies conservation, protection, and supervision. Often times a child who is misunderstood by family and companions is not mentally dull but just one who has a visual or hearing defect. We often hear parents and well-meaning friends say, "He really isn't very bright," or "Johnny can't you ever learn anything," but how often do we hear, "Maybe he doesn't hear all that is said or see what the book or board has written on it."

Do not punish a child because he or she doesn't learn as quickly as the one next door. Find out why! Our attention has been called to the fact that parents of physically handicapped children are "disappointed parents." They are unwilling to admit the physical imperfection of their children. Teachers also are reluctant to face a situation out of the ordinary with which they are not trained to cope. Teachers and parents must understand each other in order to help the child who cannot meet such a situation alone. Herein lies one of the services of the health department of the school system.

From here I will speak with a view of the Long Beach City Schools Health Service Department in mind. Long ago our department realized that the first step in a fact-finding program would be to discover the children who needed help. This was accomplished by means of screening and a testing program.

The vision testing program consists of the initial screening of students by the Snellen or Reber tests, and upon recommendation by the teachers, of students who are poor readers, who squint, get too close to the book or board, complain of blurring, headaches, and other visual complaints. The students who have an abnormal Snellen or Reber test or those who are suspected of visual defect by the teacher are then recommended to have a further vision test. In our department we have been using the Keystone Telebinocular equipment for this vision testing. This, of course, is not fool-proof and is time consuming. But if we are able to show the pupil, teacher, and parents that there is the existence of a definite visual defect and not just a mental dullness, it is worth the time and effort consumed. Merely discovering the existence of the defect does not end the job of our department. The parent is sent an abnormal finding card and is asked to send an answer or come over and discuss the problem with the school nurse and the child's teacher.

Our school physician, Dr. James Houloose, sees every Keystone test result sheet and gives his recommendations such as, 'front seating', 'see specialist of your own choice', 'no recommendation' (test normal), 'retest next semester', et cetera. The result is given to the teacher and parent—not just placed on the student's health card and forgotten.

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We make note of the parents' reply and follow through to see that the recommendation is carried out in the best interest of the child. Usually a few weeks after the test we call in the child of an abnormal finding to see what progress has been made and, also, to see if we can help further. Where the family is financially unable to carry out a recommendation of 'see specialist' the school nurse has a conference with the parents to see if a way can be found for our department to help either through the P-T.A., or through the children's clinics in town, either free or part-pay.

If the visual defect is great and calls for more than outside care of a specialist, we have in the elementary and junior high schools special classes called, "Sight Conservation Classes." Here is used the accepted coloring of paper and surroundings, size of print, and writing implements, paper, et cetera as set forth by the Sight Conservation Association. The teachers of the classes are especially trained in their field of work. The results of the past few years of study by our department can be seen by examining the lists of results of our vision testing. We are just beginning to make a dent in the surface but this year 1941-1942 has been more satisfactory in responses of the parents and local specialists. We are getting the parents more used to what we are doing and the parents themselves are requesting a Keystone examination for Johnny or Mary. Most of the time this is as far as it goes--the testing is done but no cooperation after the defect is found. Conclusions will be taken up at the end of this paper on both vision and hearing defects.

The first step in the fact-finding program of hearing defects is the discovery of those children who need help. This is done in our school system at Long Beach by means of testing with audiometers of two types-- group (4A Western Electric phonograph) and individual(5A Wes-Electric pure tone) Audiometers. In our large school system the group audiometer is used for the preliminary testing to pick out the cases with deficiencies in hearing. Those children who fail the 4A test (hearing loss greater than 6%) are tested by pure-tone or 5A audiometer. Of course, the 5A is more accurate and is preferable for all students whenever possible--but it is not possible in a large school system because of the time it takes--chiefly because there is usually only one or two operators and only one 5A audiometer to use in testing.

Upon the finding of the 5A audiometer, of the physical examination of the pupil by the school physician, and upon information obtained by conferences with the school nurses, teachers, and parents is based the follow-up program. Before the recommendations for treatment are made it is desirable to have one or both parents present at a conference and to watch the child's hearing being tested by the 5A audiometer. The audiometer shows no partiality and nothing convinces a parent like watching while his child's hearing is being measured. If special medical care is indicated the parents should furnish this wherever possible. If they are unable financially to provide care, other arrangements should be made without delay. Here in Long Beach the parents are questioned as to how long they have been residents, what the wage earner is making and the

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number in the family. Upon these findings and the need of the child is based our physicians' opinion as to where the child should be given a referral slip.

We, also, have hard of hearing classes and lip reading instruction classes to which children of a great degree of hearing loss are sent pending the outcome of the specialists' examination. Of course, the full cooperation of the parents and child is needed for the completion of such a program. Too often, when parents have not been convinced as to the real need, they have taken their children to practitioners whose training has not prepared them to diagnose impairment of hearing. This may result in a discrediting of the work of the school physician and nurse. This type of situation should be avoided. Convince the parents that they must face whatever facts may be revealed.

Individual and educational adjustments are often as important to the hard of hearing child as the actual discovery of the handicap itself. Parents, relatives, and friends need to do their utmost to help a handicapped child take his share in the normal school and home life as well as that of the community.

In October, 1941, the office of the County Superintendent of Schools published a monograph titled, "A Conservation of Hearing Program for Los Angeles County," which in its appendix contained a very good program for teachers and nurses; a program for parents, and takes up attitudes and adjustments, a program for helping the young hard-of-hearing child at home and at school; also considers the emotional problems as well as educational problems. I would like to recommend this to all teachers. And above all to remember a child will not outgrow a hearing loss --consult a doctor--do not use home remedies.

#### Conclusions

- I. Mental inability to understand or grasp a situation or problem must be distinguished from physical disability to understand. Before drawing a conclusion be sure all facts have been considered.
- II. That vision and hearing defects be classified in such a manner as will permit the school health staff and teacher to give primary consideration to those that are most severe.
- III. That a procedure of follow-up be organized in such a manner as to include arrangements by the school nurse to obtain clinic referrals for appropriate cases.
- IV. To strive for better cooperation of child, parent, teacher, and school health workers.
- V. That the classroom inspections of children by either teacher or nurse give more attention to the detection of running ears and

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squinting or red bloodshot eyes and sleepy looks than to spotless hands so that such cases may be promptly directed to medical service.

VI. Childhood communicable diseases are not to be considered lightly. Remember they often leave impaired vision and hearing as well as pox marks and scars outside and weakened heart and kidneys inside.

VII. Remember a child is not a miniature adult. Consider their problems seriously.

As a final word I would like to call your attention to the summary of a paper read by Mr. Conrad Selvig at the California Conference of Social Workers in San Francisco on April 19.

Summary:

Hearing tests for all children by adequate scientific methods.  
Proper medical follow-up treatment and care for all whose condition requires such care by qualified physicians.  
Remedial instruction where necessary. Group hearing-aids in schools where warranted. Classes for hard-of-hearing adults.  
Vocational guidance and assistance in placement. A fair deal under Civil Service rules.  
Full-time directors of work for the hard-of-hearing on the staff of both State Department of Health and State Department of Education.  
Training courses for teachers of the hard-of-hearing in State and other Teachers' Colleges.

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169951

SERVING A CITY IN WARTIME

Julian Lesser, Chairman, Los Angeles Defense Council Film Bureau

National coverage by office of civilian defense films

Background

World War II opened the curtain on the educational film to the national audience. Until the outbreak of hostilities in Europe, American visual education had largely been confined to the classroom and the sales meeting. Today, visual education is playing a vitally important part in our war effort in instructing, informing, and fortifying the morale of our people.

The War alone did not bring this about, however. Visual education was standing in the wings, more than ready. The national emergency found this able performer had so perfected herself since the last War, that she could carry these tremendous responsibilities. Let us examine the progress made since November 11, 1918. There were four main developments, well known to you.

1. The addition of sound to the mute cinema.

2. The advances in the technique of production, notably by the use of animation.

3. The progress in the technique of presentation, which quietly proceeded in the classroom, in the sales room, in the European "propaganda meetings", and in the laboratory.

4. The development of today's efficient sound and slide film projectors, assuring highly mobile, economical, safe, and simple operation.

Thus was the medium ready for the great tasks to be imposed by the new War. What the War brought about were certain conditions which demanded the use of visual education.

1. The new type of warfare introduced by Hitler--total war-- required that the enormous masses of citizenry be quickly acquainted with methods of defending themselves. No medium but films could so effectively, so rapidly, and so economically acquaint our people with these methods. Thus the current production of OCD films.

2. The armed forces and war workers similarly had to be quickly trained in the technical arts of warfare and production. Thus the huge film programs of the armed forces, and the U.S. Office of Education series.

3. Our people had to adapt themselves to new philosophies of life. Films illustrate these new philosophies, and help harden our will in the morale type of picture. Thus the OEM program ("Woman in Defense," "Bomber,"

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etc.).

4. Away from our shores, our allies and potential allies must gain a true picture of our sincerity, our power, and our determination to win. Thus the film activity of the Coordinator of Inter-American Affairs.

## Coverage

Of all war films, the OCD subjects will reach the largest audience in the U. S., probably all but the infants, the aged, and the infirm. The program contemplated will cover first the entire OCD voluntary corps, or 8,000,000 workers, as stated by Lt. Col. Walter O. Burn, former Chief of Training. The voluntary corps, if they follow the standards set by certain local workers, will cover the country, neighborhood by neighborhood.

None other than Mr. Donald Gledhill, Secretary of the Academy of Motion Picture Arts and Sciences, who is Community Air Raid Warden for Hollywood (#3), demonstrates how it is done. In one week, Mr. Gledhill reached 7,000 people, 3/4 of his district, with continuous showings of training films at the Chamber of Commerce Bldg., in a plan executed by the 814 defense volunteers of the district.

Would it be out of order to assume that a considerable proportion of the students and teachers of the country will see OCD films in their classrooms? Others among you can supply a more detailed answer than I.

The vast theatre audience of the country will receive OCD films in a program that is already under way. Over 13,000 theatres have pledged their screens to the War Activities Committee of the Motion Picture Industry for the "dating" of war films.

According to Dr. Gallup, 32,000,000 of our people seldom attend theatres. A large segment of them will be reached by OCD films under a "public availability" service, such as supplied by the Los Angeles Defense Council Film Bureau. Under this plan, all types of community organizations have the privilege of borrowing films and projection facilities for their meetings. Now Mr. 32,000,000 may not be a movie fan, but he is usually a member of some kind of organization. In this highly complex modern society, everybody belongs to something. If he is not a Mason, he is an Elk; if neither, he has a grange card, a union card, or she has her reading club or service group. Both men and women have their company associations, and of course, their churches.

The program chairmen of these varied groups are constantly on the alert for material to present to their meetings, particularly in wartime. Be assured that in Los Angeles, this service is gaining wide usage.

Civilian defense use of visual education in Los Angeles

Let me now reveal the Civilian Defense use of the educational

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screen in Los Angeles. I say "reveal" because this use has been "kept in the dark" (in both senses). No public statement has yet been issued on the Los Angeles Defense Council Film Bureau, for reasons which will soon become apparent to you.

## Position at the Start of the War

On December 8, 1941, Visual Education was a highly desirable guest at the Civilian Defense party, but this guest was in the mortifying position of being lost in a tangle of uncharted byways, with no evening dress to wear.

On the one hand was the public and volunteer workers clamoring for authentic information and practical training methods on what to do, and how to do it: (How do I black out my house? What do you fight an incendiary with? What can I do to help?) On the other hand was visual education, able to answer most of the questions, and ready with a score of films to answer them immediately. But the location of these films was a mystery only an expert could solve. And the means to project them was an even greater mystery.

In short, there was the demand for screen education, and there was any supply of films, projectors, and operators. But between the two, there existed an almost complete vacuum. Over all was the problem of feasible financing.

## The Los Angeles Defense Council Film Bureau

To face those four problems, and to supply the answers, the Defense Council of the City of Los Angeles, Mayor Fletcher Bowron, Chairman, authorized the creation of a group which took the name, the Film Bureau, whose efforts were devoted exclusively to the educational film. The Film Bureau functions under the Defense Council Morale and Public Relations Committee, Mr. D. D. Durr, Chairman.

## The Demand

The problem of demand was simple. There it was—one huge uniform demand by every single individual in the City, for authentic information and training. Every medium experienced the same demand—the newspapers, the radio, governmental publications, books, magazines, as well as the motion picture.

## The Supply

The supply problem was threefold: films, projectors, and operators.

We combed every film list we could lay our hands on. We found scores of valuable films available, all the way from the local OEM office to the British Ministry of Information in New York City.

Of all, these few were selected for service in Los Angeles:

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"Fighting the Fire Bomb"                    "War and Order"  
 "London Fire Raids"                         "Stop that Fire"  
 "Safeguarding Military Information"        "Women in Defense"--and the entire

CEM list.

There were roughly 275 sound projectors in the Los Angeles area divided into three main groups: the preponderate group owned by the Public School system, a large group in the hands of commercial firms and institutions, and a group scattered among private individual owners. The use of school projectors for civilian defense purposes was facilitated by the fact that most civilian defense meetings are held in school auditoriums, by design of the founding fathers of OCD. Those projectors could be borrowed by proper application to the Board of Education. The remaining projectors were registered into a voluntary pool, under direction of Mr. Walter Evans, a professional volunteer himself.

The operation of a 16 MM projector is simple but technical. Mr. Evans pooled experienced volunteer operators, and he and Mr. Edward Schwarts are preparing a course to train a large corps of volunteer operators with the aid and cooperation of the school system.

#### "The Vacuum"

The vacuum between demand and supply was mainly a problem of coordination. The Film Bureau took the policy of being a service organization to the balance of the Defense Corps. That is, we stocked and facilitated the showing of the above films for, not to the Wardens, Auxiliary Police, etc. We did not initiate their exhibition; we did not cover the City with each film in a rigid program. Rather, we arranged showings at the request, and under the direction of the Defense Officials. We did not take the training of a City into our own hands.

This was important, because the Police Department themselves coordinated the films into their own training program. The Fire Department with their heavy responsibility for the life and property of the City, made use of films as Chief Alderson and Deputy Chief Danks saw most fit.

All films to be listed by the Film Bureau were previewed for the approval of our officials, under direction of Mr. Ted Geissler, Asst. Secretary-Director of the Defense Council, (who acts as Certification Director for the Film Bureau).

A central booking office was established in Room 86, City Hall, staffed by the Speakers Bureau. The list of films and conditions of securing them were made known to the Defense Corps by Mr. Samuel Friedman, Defense Council Information Director. Today, a qualified group chairman need only identify himself here to reserve an officially endorsed film program for his next meeting. On the day of the meeting, he picks up the films here, and returns them the next day, where it is inspected and repaired. It is all very simple. And it works.

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The film applicant is asked to make his own arrangements with the schools for a projector. Where a qualified group can not make such arrangements, the booking office secures a projector and/or operator by a call to Mr. Evans, the Equipment and Operators Director.

Soon this was working so well that requests for films came in from areas outside the City, such as Santa Monica, Burbank, and Pasadena. This was made known to County Defense officials. In March, at the request of Mr. Paul Shoup, County Defense Director of Public Relations, the Film Bureau began to service all of Los Angeles County. Mr. Saul Elkins was named to the Bureau as County Coordinator.

In this setting-up period, there was no precedent to follow. Therefore we were careful to advise the Coordinator of Government Films and the OCD in Washington of the steps we were taking; we dovetailed with the State Council of Defense Film Section, and at this time Mr. Earle Swingle, the OCD Films Distributor for Southern California, is a member of the L.A. Film Bureau. We look forward to the issuance of the OCD pamphlet on the conduct of film bureaus, that we may further perfect the L. A. Bureau in line with announced policies.

### Financing

Financing of a visual education program is the major obstacle of all such programs. But we were able to lean on a good strong arm--the unselfish patriotism of every individual necessary to the conduct of our program.

Thus we were able to set up the booking and film handling function on a non cost, volunteer basis. The Speakers Bureau which staffs this office is actually the City Assessors Office. Mr. C. K. Steele, Speakers Bureau Chairman, is the City Assessor, and his municipally paid staff conduct both the Speakers Bureau and Film Bureau booking, as their contribution to the Civilian war effort. The Assessment Office bears all minor costs of telephone, mimeographing, etc. Mr. Steele resourcefully borrowed film splicing and repair equipment from another City department.

To proper defense groups, the City schools loan their auditorium and projection facilities.

Mobile projectors and volunteer operators were pooled by Mr. Evans on a completely volunteer basis. I wish I had time to name each of these individuals. Their work, in giving up their time, and in seeing the films over and over again, was actually valiant. In the beginnings they traveled to meetings on their own tires, a service we have been forced to discontinue.

But cash, hard cash, was necessary to procure the majority of the films. Here we faced a difficult problem, to put it euphemistically. The \$100,000,000 voted by Congress for OCD was earmarked for vital

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equipment--helmets, stirrup pumps, and the like. The funds voted by the City Council for local Defense was *en toto* required for administrative and special equipment--control boards, fire equipment, etc. The Film Bureau could not raise its own money by any kind of service charge--L.A. Civilian Defense policy required that all activity be carried on a volunteer basis. Nor could any admission be charged at these purely defense showings. What to do? You may be interested in what we did.

We knew that each film procured would reach tens of thousands of people. We knew each film was comparatively cheap. We concluded that any person who would purchase a film for this circulation would avail himself of a remarkable instrument for good will. Certainly there must be public spirited individuals and firms in town who would see it this way, too.

To find out, we held a small test preview of the best subjects on January 30 for certain selected people. How would they take it? Mr. David O. Selznick, although unable to attend, expressed great interest in the project, and commended it. As the guests began to arrive, our spirits rose. All four executives of the Advertising Club of Los Angeles came, which was important. Councilman Norris Nelson conducted this preview and we got off to a good start. We presented the idea that individuals and firms should purchase these films, and the films would carry a title indicating the donor.

Yes, the message got through to Garcia. A Mr. Hawkins stepped forward to make the first film donation; his company's name was significant--the Good Humor Company. Mr. Roy Kellogg, Executive Secretary of the Advertising Club, suggested that we present the idea to the other Club officers. We did so, and the Club officially invited the Bureau to present the same program to its entire membership at the regular luncheon meeting, February 24.

On February 24, we set up the equipment at the Biltmore shortly before noon, with trepidation. This was the test. Soon the room was full to overflowing. The honor guests arrived--Deputy Chief McDonald and Deputy Chief Danks, War activities heads of the Police and Fire Departments. The men ate. We ran the films. Councilman Nelson and I gave our little pieces.

Well--it was a success. Everybody applauded, and everybody was interested. The Club appointed Mr. R. G. Kenyon, Publicity and Advertising Director of the Southern California Edison Company, to take orders for films. Mr. Kenyon was named Procurement Director for the Bureau, and has arranged for the Advertising Club to keep the records.

Thus our financial problem was underwritten by the businessmen of Los Angeles, and the Film Bureau was able to conform to Defense Council Policy of not handling any money.

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## Record of Operation

Statistically, the Film Bureau supplied 455 bookings to a total audience of approximately 116,750 in the period January 14 to June 1, 1942. These figures can be broken down to:

<u>Group</u>	<u>Bookings</u>	<u>Approximate Audience</u>
Civ. Defense Corps Units	255	69,750
L.A. Public Schools (Students, Teachers, PTA)	80	32,000
Gen. Public (Private Schools, Clubs, Organizations, etc.)	84	15,000
Total	419	116,750

The above figures are tabulated by the groups booked, not by prints booked. That is, the usual group of 250 booked two or more films; this is represented by one booking for an approximate audience of 250. Actually the total of print-bookings is close to 900, and the combined audience, totaled by prints, is roughly 250,000.

But for certain factors, this circulation would have been larger. As these factors are moderated, coverage will be increased, and we anticipate reaching everybody who should be reached in Los Angeles County within two years or less, unless a speedy end to the War terminates the Film Bureau function.

The beginning of the  $4\frac{1}{2}$  months' operation represented above was spent acquiring prints. If you remember, the Advertising Club support arrived only after February 24. The variety of these prints is even now limited, and as more War films become available, the wider will be the interest in them. Finally, the largest audience will be the public at large, which is represented above by only 15,000 people, or 13% of the total. This is because we have withheld that public announcement.

The efficiency of this operation is a tribute to the power of the educational film. The above circulation was accomplished, mainly, with only 18 prints!

Under the system of allowing the group captains to call for the films one day and return them the next, we find that our prints of "Fighting the Fire Bomb" were in use practically every single day since January 14. By close planning, one print worked four times one day.

The 18 prints are possessed directly by the Film Bureau, and cover all titles but the OEM subjects. The latter, being informational types, are held by the local OEM office, and inquiries for them are directed to the latter office.

The effectiveness of the operation is a matter of study, perhaps by one of yourselves. We did not undertake any measurements of the value

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of these films along standard laboratory procedures. Primarily, there was no need to. (Secondarily, we did not have the time). Most people—both group leaders and their pupils—preferred films to lectures and demonstrations. Some did not. But the facts were, that films were easier and cheaper to present than lectures and demonstrations. Over all, was the uniform, large, and rapidly growing demand for them, which the Film Bureau, as a service group, was obliged to supply, and to leave judgment in the hands of our officials.

#### Observations on Operations

Certain of our observations as a result of this experience may prove illuminating.

I found the first, the day our first print of "Fire Bomb" arrived. My telephone was deluged with calls from people who wanted to see it, immediately. Ordinarily I am an obscure citizen, but this day I had my moment of glory, however doubtful. And during the first few hectic weeks of setting up the system, the booking office telephone was constantly busy. The news of this print traveled like a Sierra Madre brush fire. Every showing to 300 Wardens produced 300 missionaries.

Therefore, we made no public announcement of the existence nor service of the Bureau, feeling that such announcement would treble and quadruple the demand for our prints, a demand which we could not satisfy. Our first obligation was to the Defense Corps, whose showings must precede the general public's. There would be little gained by making known a service, and then disappointing most everybody who showed any interest. So we delayed publicity until such time as we should have sufficient prints and sufficient projection service to satisfy the general public demand. As of this date, we have not reached that point. The demand still greatly exceeds the supply. Officially, the wraps have not been removed. The Club chairmen and others who secured 84 bookings for the general public noted, learned of the Film Bureau solely by word of mouth.

We found a familiar use for films that is rather important to civilian defense. A film gives a group leader concrete matter around which to build a meeting, and meetings are the essential means of community organization. In this connection, any relevant film will do, be it newsreel, documentary, official appeal, or instructional.

#### War Visual Education and the Schools

The schools of the country have an integral relationship with War screen education.

Schools are the logical meeting place by virtue of their geographical locations, for Civilian Defense meetings. The public school is a municipal institution, supported by everybody's taxes.

Conversely, in the case of War films, the cooperation of the schools

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is essential because of their locations, their possession of projection equipment that is unused at night, and their ability to furnish trained instructors and operators.

A school meeting is psychologically more effective for Mr. Citizen, when he comes to learn. Old reaction patterns are recalled, and he absorbs more than if he were to meet at his Club house.

There is a public relations feature too, for the schools. The adult visitor appreciates the more the facilities which the school affords him. Any posters or exhibits he sees as he walks down the corridors are not lost upon him.

Other reports at this conference will be able to elaborate upon the activities of students and teachers more fully.

Personal suggestions

There are some personal thoughts I bring to this gathering. In these please understand that my approach is colored by my professional activity in "the movies". I think in terms of reaching a large audience with a popular subject. I also think educational films are underrated.

1. Could a survey be made of the time saved in America's war effort by educational films? They say that films cut the time of training a welder by 25%. If it takes four weeks to normally train a welder, then films can save one week. And if 20 ships are built in a week, then possibly films will deliver 20 ships to the country; or 100 bombers; or an Army ready two weeks ahead of time. When we win this terrible War, we should know in black and white, the film's contribution to our victory.

2. How about a series of annual awards for excellence? Almost every line of endeavor has some type of recognition for progress in its field. Newspapers have their awards of merit. Hollywood has the Academy Awards. Such awards would promote the standards of educational films, encourage advanced effort, and attract ambitious people into the field. There could be awards for the best treatment of a mechanical problem, of a philosophical problem, of the use of animation, etc. Could some recognized institution do this? No emoluments would be necessary.

3. A new understanding is arising between the theatrical and non-theatrical motion picture industries.

In the past, the theatrical picture industry didn't quite know what to do about "16 MM." The theatres sensed competition. Hollywood feared to enter the field because the theatres would complain, and, frankly, the commercial possibilities were hazardous, except for the sponsored film at which the theatres balked.

Educational film people decried the merchandising procedure of

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selling movies, and resented Hollywood production features.

Now, largely because of the war, Hollywood at last appreciates the merit of the educational and documentary film, and its makers. At the annual Academy Awards Dinner, held last February, a special category was created for a documentary, and Mr. John Grierson was invited as a special speaker to present the "Oscar". (Even prior to this, the "March of Time" had been awarded a statuette). I recall that two prominent documentarians, Mr. Pare Lorentz and Mr. Herbert Kline, have been employed to devote their talents in the film capital.

The Research Council of the Academy has undertaken an immense program of training film production by all studios for the Army Signal Corps, of which about 100 completed subjects (about 250 reels) will have been delivered as of July 8. Since every studio participates, there will be a group of people experienced in educational production, spread uniformly throughout Hollywood. We can expect great contributions from them to the educational screen, under the Academy program and in the future. Mr. Walt Disney has deeply interested himself and his firm in the educational medium, and has already made great contributions in technique.

Every studio will make a part of the 26 war shorts programmed by Mr. Lowell Mellett, Coordinator of Government Films. Unquestionably this program will advance the educational film. It is expected that Hollywood will help shape the production of OCD films and further contribute thereby.

As for the theatres, they are according the war educational signal honors, by donating their screens to play them. And then, a miracle was recently wrought: a sponsored film got in, in a big way. The Weyerhauser Lumber Company one-half-hour educational was booked into the entire Fox West Coast Theatres circuit. The Weyerhauser Company will pay good money, based on attendance, to the Variety Club, which is the theatreman's philanthropic organization. The door is now wide open for other sponsored subjects to follow. To the theatreman, the admonition is, in the picturesque verbiage of a prominent executive, "don't stick your head in an ostrich!"

On its part, the educational field is realizing first hand, the matchless technical proficiency that Hollywood has attained. The field is also understanding the lore of mass appeal, which is the special ability of the screen center. Have you seen "Sergeant York?" "Mrs. Miniver?"

The educational field can aid the theatres by showing the country its War films outside the theatre, in the OCD meeting, in the classroom, and in the group meeting. Theatres are being asked to play an increasing number of non-theatrical films which are bound to become somewhat of a burden. Sooner or later, the theatres will cry "Uncle". Right now, "Uncle Visual Ed" can start the relief.

As a matter of fact, the theatre may not be the place for a needed war educational film. Mr. Citizen must pay to get this knowledge if he is to see it in the theatre. The subject must be tightly condensed,

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because the average audience will only sit comfortably for a limited period, and time must be allowed for the feature attractions. The production must be slanted for entertainment, because that is why Mr. Citizen goes to the theatre; entertainment is not always possible in a grim documentary. Mr. Citizen is not always in a mood to be taught in his cinema palace. Fifty percent of movie attendance comes on just two days a week--Saturday and Sunday. When Mr. C. is found nestling with his girl friend in the loges Saturday night, he may not be in a mood to receive the facts about decontamination of dwellings.

Who has seen "Fire Bomb" in a theatre? I did, and when our hero stalked the incendiary into the parlor, giving us a superb view of his posterior, the comedy was not lost upon the audience.

There was no reaction of laughter to "Fire Bomb" in any 16 MM. showing. The groups met for a serious purpose; their attention was sharp; there was time for detailed explanations and questioning; the film could be repeated; and interest was high.

The theatrical and non theatrical fields are active in different mediums--the one in entertainment, and the other in instruction. A good rule of the thumb is: theatres bring people to the screen; visual education brings the screen to the people. But these two entirely different forms can be, and are, of immense aid to each other.

4. Could a less unwieldy name than "visual education" be found? A good nickname would do it. The "Motion Picture Industry" identifies itself as such only in speeches and in financial reports. Otherwise, it's "the movies", and they have gone a long way on that name. We are supposed to be conserving things today. If I could have cut out five of the seven syllables in "visual education" as I wrote this, think of the saving in ink.

"Audio visual aids" is a technically correct term, but you could slay a dragon with it. What students under the 8th grade can even pronounce it? Look at another field--chemicals. The technical names they develop are a foreign language. It is difficult to pronounce "trinitrotoluene"--but every man in the street knows what TNT is.

Some simple name to express visual education, and all the various complicated synonyms, acceptable to all in this field, would be a rallying symbol to all so engaged. Everybody in the country would come to understand this symbol, and the media would find itself gaining increased recognition.

#### Conclusion

America, and our allies, can be proud of visual education. When war needs called, the response was prompt, and the service great. But the medium has a responsibility to continue even more effectively those

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particular jobs wherein no other medium will suffice—in training, informing, and fortifying the morale of an entire people. Every worker and student in the field must stick at his task like a soldier, that visual education may attain those ends, now so vitally important. Foundations must be continued to further peaceful intellectual and cultural standards after the War.

The way is bright for an illimitable future of service and advancement to all. With diligence, application, and perseverance, this future is assured.

## HOW I TEACH READING

Virginia Belle Lowers, University of Southern California

This is the story of a certain class, what we read, and how we studied. From the recital you can learn probably as much what not to do as what were good to do.

In high school one cannot study a masterpiece of literature so deeply or so fully as students of a more mature age may be required to do. One must use the epic plunge, so to speak, and using interest as a spade, attempt to widen and deepen the perception of the dashing adolescents who know everything and nothing. If one has produced a favorable attitude toward reading and a serviceable method of reading, one has sometimes done all he may.

If, in addition, he has created a good and lasting impression of authors and masterpieces—behold! he has achieved well. With a sigh for achievement, I begin the story of an experience.

For the first time, our school offered a course in Shakespeare. Not dramatics, but literature—Shakespeare, The Swan of Avon, the Bard, the Master. When, among the English electives it was announced to the home-rooms of eleventh and twelfth grade students who were making out their programs for the spring semester—"drama, public speaking, journalism, English literature, Modern Literature, Shakespeare"—groans, mildly suppressed, rose here and there. No one even bothered to make a facetious remark. Twenty to forty per cent of the student body, situated in a fairly well-to-do section of the city, would go to college, but they would take advanced Composition in their A12 term, if they took any English. The "leaders" took drama, journalism, public speaking. About 35 or 40 of the 800 upper classmen would sign up for English literature. Who would be such a "character" as to let himself in for "culture", pure and simple?

Nevertheless, 22 did so, and the number rose to 32. I actually had a class. Two of them had taken English literature with me the previous semester. Two girls were refugees from England, one a refugee from Germany. One big, handsome boy back from private school, where he had been sent to get some discipline, had his place reserved the first day. Four girls couldn't find any other "solid". Two boys had just arrived from Eastern schools, where studying Shakespeare was presumably not unheard of. One girl was a drama student, a boy and a girl came from Honolulu. The others enrolled for love and with hope—16 girls and 16 boys in all.

I was excited. I had prepared myself for disappointment, remembering my modern literature elective that had to be dropped because there were so many incoming B10's, B10 English being required. First, to plan the course. Why does one read Shakespeare? For enjoyment, mainly, and then the profit—the understanding of character, the knowledge of play structure, the beauties of poetry—many things—but they all depend on

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the ability to read. I mentally listed my objectives in the order named, except for the last, the ability to read, which had to be first, second, third, and fourth. These gay and handsome youngsters, from so many different places, had gambled on a new course, and I was determined to see that they won.

Considering the fact that while their reading abilities were with the exception of three or four, all eleventh or twelfth grade, and their intelligence quotients likewise of college grade, that is 95-128, still I knew they had never read a play before, that they knew practically nothing of stage drama. Worse, poetry was to all but two or three an unknown quantity, and figures of speech just so many hieroglyphics in the original Egyptian. How we teachers manage to allow them to go twelve years to school and still remain ignorant of any but fact-finding reading, only we ourselves know. The pressure of teaching speech and writing, the great difficulty of making students able to read even for physical fact, the problems of "activities", the undifferentiated groupings, the large and overflowing classes, all have something to do with it, as well as the fact that few family backgrounds of today include a love of literature. We now have in school all the children of all the people and they are bound to be a mixed lot. But it is for them that we are fighting the war, and for our culture, for the humanities,—in fact, for Shakespeare. No more alibiing—I've got to teach these people Shakespeare and make them like it.

It was the February semester, and the last period in the day, so they were all champing at the bit ready to plunge into Art. The first problem promptly reared its ugly head. There were no books. True, the school had a few sets of "Six Plays from Shakespeare", used in the tenth grade(if you had the time and could reserve a set) for Julius Caesar or Midsummer Night's Dream, and/or Merchant of Venice. Few of all the students managed to have read all these. Macbeth they could have in English literature, and I did not propose to start with Hamlet, the other play. I had decided that the thread of learning would be the development of Shakespeare as a dramatic artist, thus giving ample room for comparison of plays throughout the course, and developing the appreciation of my students just as Shakespeare developed the appreciation of his audiences. "We'll have to buy our own books," I said. "For fifty cents and a soap box top you can get a student's Shakespeare, or you can buy one for a dollar at the bookstore in the Village." The students were pleased. Already the class was quite different from any English they had taken before.

In the few days while they were procuring their books, we began to build up the background for our reading. Oral reports by everyone—first, on the days of Queen Elizabeth, the rowdy, exciting world of the English Renaissance—the expanding commerce, the life in London, the dress, the manners, the church, and the fascinating Queen herself. Naturally, this led to an investigation of King Henry VIII and Mary, Queen of Scots. We also read about the growth of England as a nation and her

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policies towards France, Spain, and Italy. Superstitions of the time formed an interesting topic of study. Then we turned to a survey of the great literary figures of the day, with especial emphasis on the growth of the drama. Miracle plays and morality plays were explained—Marlowe, Llyl, Greene, and Jonson brought in for inspection, the blood-and-thunder tragedies and the interest in classic comedy and tragedy mentioned, and models and designs of the theatres shown in class. After the students made their reports each day, the teacher would, with incident, example or further details, brighten up the picture, draw comparisons of the period with today's, promote discussion until the whole scene came alive, from Mac and the Shepherds, to Marlowe's mighty line. Mary, Queen of Scots, going to her death after having been practically a fifth columnist for 20 years, the Puritans inveighing against the theatre because, among other things, it kept their 'prentices out late, Kit Marlowe dying in the gutter with a knife in his back, Sir Philip Sydney, ideal gentleman and soldier, dying on the battlefield, having made himself equally famous as a writer; the prevalent excitement about language and literature.

What has this to do with reading? It is impossible to appreciate fully a piece of literature without understanding its background. These students had all their knowledge of Elizabethan times from Errol Flynn and Bette Davis. Anyway it took only a few days. When we got our books, we studied the life of Shakespeare himself, with pictures, gazed upon a life-sized copy of the First Folio, and took our first test. Everybody passed it, and we began to read "The Comedy of Errors."

A report on Plautus' comedies (from Hamilton, "The Roman Way") showed them what to expect, also a calling to memory of the moving-picture, "The Boys from Syracuse". The teacher read the first scene. This explained the situation of the plot, and the teacher drew the stage scene, rather crudely, on the board, showing how the entire play could be depicted in one set with three centers of interest where the action would take place. The underlying technique of this method is obvious, though not novel. Shakespeare wrote his lines to be heard; that they were great poetry was almost incidental. The class must learn to hear the lines and see the action as they read to themselves. As the lines portray drama, they must mentally cast their characters, make them up, costume them, and give them their stage business. I chose The Comedy of Errors because the situations are hackneyed enough to be familiar and the lines rather easily understood, each being almost complete in meaning by itself, and not very figurative. Besides it is very short, and we could finish it in one week.

In this first play, I myself described the characters to them as to type, dress, and action. The situations were perceived to be stock bits of comedy still in use on the radio and in various plays. When I assigned the next couple of scenes, everybody knew the situation and characters and was interested to read in order to see what happened.

The next day, however, the second difficulty made itself clear.

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Reading hastily ahead in their ordinary skimming fashion, the class had largely bogged down in the language. Most of them didn't even know who was talking half the time. You will remember the two pairs of twins' names were Antipholus of Ephesus and Antipholus of Syracuse, Dromio of Ephesus and Dromio of Syracuse, marked Antipholus S. and Antipholus E. and similarly, Dromio S. and Dromio E. The class had generally neglected to notice the E's and S's and were worse mixed than the characters in the play itself. I read the scene, describing the action and told them how to figure out the action from the words. Then we listed some Elizabethan words now somewhat archaic, as pate, sconce, prating, cozenage, and talked about puns, plays on words, and the low comedy of the servant class. I assigned parts for them to read.

The next day the class itself read the scenes, and as there was a lot of name-calling and "bright cracks", together with further mixed identity, much fun was had by all. I assigned more parts and also an Outline to be made by everyone. This was the usual notebook ingredient to be made for each play studied--name of play, probable date of composition, source of play, characters, brief summary of plot and subplot, and memorable lines. Choosing the lines and discerning the plot and sub-plot took more than cursory reading, but was not difficult, so we were still achieving our first objective--enjoyment. True, the reading aloud--(we proceeded to read the whole play aloud, taking parts)--was not very good--the girls' voices were too light and the boys read too fast--but at least the meaning of the lines was brought out--by aid of the teacher where necessary. Besides everyone was able to get the humor of the play and was enjoying himself greatly discussing the mix-ups. When we got through, we talked about the fact that practically any young and handsome people could play the leads, that the comedians might have comic voices and funny actions and that the identity error in the last lines after the happy solution would send the audience away still laughing. We had read one play and hadn't been bored. But it was a good thing we knew something about the rough Elizabethan times. The language did get a bit strong in places. I assigned Twelfth Night.

This time the first thing the class did for homework was to find out when Shakespeare wrote the play and where he obtained the story for the plot, also what the title meant. Of course some of them started to read anyway, and didn't understand it any too well until after the teacher launched them next day. For it was necessary to describe the costumes and setting, especially the musical numbers, in order to allow the students to see the action as they read. These explanations didn't delay the reading, for the class asked and answered questions, too, and now perceived how to find answers to their own questions in the lines themselves. In the first place, the characters were much more fully developed in this play, and the topic, a love story with complications, more like most of the movies they had seen. "If music be the food of love, play on," the very first line, indicated the character of the Duke and the mood of the drama. We read through the inciting incident and assigned parts. Shakespeare's use of prose, the clowning of Sir Toby Belch and Maria's quick wit caused new interest, and the reading

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aloud became much better as their understanding grew. The next day the class read the scene with much gusto, noting how much more colorful the lines were than in *The Comedy of Errors*, and how much each character began to stand out. The teacher told them to read farther and dictated ten questions to be answered in writing. "I like questions like these," one of the boys said, unexpectedly. They were framed to cause the students to miss no revelation of character or witty riposte, to discover musical and meaningful lines, and to catch every little complication of the plot. The idea was to cause them to read more carefully for the purpose of bringing to life the characters and action. "Find examples of difference of speech indicating difference of rank." "What are the best lines on love?" "How do we know that the Lady Olivia herself is witty?" "Why does the well-educated Sir Toby keep such a stupid fellow as Sir Andrew as a boon-companion?" "How did Sir Andrew manage to become a knight since he was never a soldier?" "How can Viola get away with seeming to be a boy?" "Find descriptions of characters by other characters"--that sort of thing. The questions incited the students to read on to see what happened to the characters. When, in two days, the papers were all handed in, the teacher corrected them immediately, chose the best or contrasting answers to each question, and handed them back the next day, calling on those chosen to read their answers out loud. The grades were rather good, showing good reading ability, but the answers weren't all complete or in agreement, so their reading provoked a hot discussion, causing a re-reading of lines, explanation of figures of speech and interpretation.

Now we read the famous drinking scene, the teacher explaining how the voices should sound, and the business. Then we played a record of the song, "Come away, come away, death" and by now the students began to realize the effect of sound in the play--the different voices, the songs, and the words themselves. New assignments were to memorize ten favorite lines and to make the play outline. When we finished reading *Twelfth Night*, we played the Orson Welles records of the shortened version, following the lines in the books furnished, and the class began to see how Shakespeare could be read. I would rather play these records after a class had studied the play than before, because, else, in the rapid reading, they miss much of the connotations and character interpretations, and get only the broader outlines of the plot. Comparison is a very good method of learning. Now they could compare their readings with that of the Mercury Theatre actors, and the comedy *Twelfth Night* with *The Comedy of Errors*. The test consisted in making these comparisons and other judgments on the characters, Shakespeare's growth as a dramatic artist, comedy devices, etc. By reading aloud the best answers to questions written out for homework from time to time, the class had learned how to write the essay-type examination, expressing themselves more fully and in their best language, backing up what they had to say by lines or incidents from the play. Curiously enough, they enjoyed it, and their reading and oral recitations improved. But they didn't claim to enjoy the final test which was on figures of speech exclusively. During the reading of the play, I had defined for them the

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metaphor, which is the secret of meaning of all language, and while we had noted other figures of speech, as alliteration, onomatopoeia, and simile, I had emphasized the force of the direct comparison in making speech meaningful. Metonymy, synecdoche, and personification I lumped as types of metaphor, because the class had never heard of them and was having much ado to find the figures at all. The test consisted in a number of the brilliant lines from the play, for each of which the students were to tell--(1) What two things are compared? (2) Is the comparison a valid one? (In what way are the two things alike, that is), (3) What is the meaning of the passage? While some of the students performed well, many received only a "C" on this test, for figurative language forms the sort of reading they had not till then been taught. Reading the best answers made much more clear the wealth of the English language and of Shakespeare's imagination. Besides, the students now saw that an understanding of these figures of speech was necessary to good reading aloud or acting of the play. As a result of the ordeal the class was now knit together as a unit--they had laughed together and suffered together. No one was afraid to express his opinion, or to read aloud. Time to change the pace.

"Now we'll read a tragedy," I announced, "a murder play." Not Macbeth, because three or four of them had read Macbeth, but one with even more murders--Richard III. If this method of inciting interest seems cheap, I must agree that it does perhaps lack the lofty spirit. I can only offer in extenuation the excuse that it did rather amuse the class and in no way seemed to cheapen Shakespeare in their eyes. The first thing I did before they started Richard was to list on the board for them to copy for their outline the cast of characters lined up according to the parties they supported--those who followed the Duke of Gloucester, and those who were loyal to Queen Elizabeth and the little princesses. The imposing number of kings (four), earls and dukes looked exciting. We had a report on the Wars of the Roses. Before I read the first scene to get the mood and the situation set, I gave them a new type of outline to make for this play, the one about the structure of the plot--inciting incident, rising action, climax, and so on. This was to give them something else to read for and led to study questions on dramatic development, how suspense was achieved, just what the conflicting forces in the play were, and so on. After the reading of the first scene and the assigning of parts, I gave them two questions to answer: (1) Since Richard tells us in his opening soliloquy exactly what he is going to do, how does the play achieve suspense? (2) Since Richard is such a thorough villain, and yet the center of every scene, how can the audience manage to enjoy the play? These exercises served to sharpen their wits. Of course there were other study questions, written at home, graded, and returned to be read and discussed, and we read the entire play aloud in class, this time, even walking through the parts of some of the scenes. Privately, I chuckled at the earnestness with which they did this, for at the very first of the term, some of them had stated firmly that they wanted to study and read, not act. They were studying, all right. I gave them the types of tragedy, the difference between

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tragedy and comedy, so that they could compare Richard with Macbeth and other tragedies we might read. I gave them the standards of dramatic criticism, as significance of the theme, plausibility of the action, development of minor characters, originality of playwright, and the like, which formed the basis of questions on the final test. We got a great deal of enjoyment from Richard.

I have gone into such historical detail in recounting the experience of this particular class because I have thereby hoped to illustrate what I believe to be successful practices in teaching literature. Of course, Shakespeare is, as the boys say, a natural, but any unit of narrative literature may be taught the same way. However you may begin, with the author, the background, the story or novel itself, or even the structure, the main thing is to be sure the students are seeing what you, the teacher, see, and then to experience literature yourself openly and boldly, with them and in their presence. Get acquainted with the abilities, tastes, needs, and desires of the class. Mold these to fit the subject in hand, choose the opening which will ensnare their interest, and don't let it flag. Keep everybody doing something, vary the activities, bring in experience—both theirs and yours—pictures, records, but not enough to slow up the reading. By changing the methods, throw different lights on the reading so that meaning comes out, have them alert for hidden meanings as though they were detectives in a thriller, and make each class session an intellectual and emotional experience.

In our Shakespeare course, the date of the Shakespeare Festival was now approaching. Questions: Shall we enter as contestants? How many of us shall go? What with money going for war stamps, ad tires being conserved, and Eagle Rock being so far away, the class was wishful rather than enthusiastic. Finally, two girls entered as contestants in the tragedy and comedy divisions, and fourteen students managed to arrange transportation and time to attend. During Spring vacation, only four had managed to see "Much Ado About Nothing" at the Pasadena Playhouse, but their report was all that could be desired to fire interest in seeing Shakespeare on the stage. For the Festival, the drama class was entering the Pyramus and Thisbe scene from Midsummer Night's Dream, already played in costume for the student body, and a boy from the public speaking class had also entered in the single speaker contest. Although a whole day of Shakespeare might be considered a stiff dose even for inveterate lovers of the Bard, it was a success with the students. We scattered to various contests, met at lunch and compared impressions, heard the finals, and then some went home. But three girls stayed to the bitter end and returned to reproach those who had to leave after two o'clock. And everyone came back a Shakespeare "fan". That our scene won first place, and the individual contestants a second and a third, also was pleasant. Hearing Shakespeare read well, even by amateurs, does improve a literate person's ability to read Shakespeare, and being able to read Shakespeare improves one's ability to read generally. Indeed, one boy, toward the latter part of the course, stated, in a rather

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surprised way, "One thing this course has taught me, and that's how to read."

I had a perfect Hotspur in the class, so I was determined they should read Henry IV. But first it was necessary to secure a boulderized edition, for it would never do to wade through some of that tavern language in class. So I asked all over town, and finally discovered at Fairfax a set which they very kindly lent to us. Meanwhile, I had parried questions of "What play are we going to read next?" by saying "We shall now study the most disreputable character in all Shakespeare's plays." This led to many guesses, none of them right. It was good to have the Hudson edition, with all of its helpful Temple notes, now read with eagerness by the students, who had had to hunt up all that material for the outlines elsewhere before. One of the boys had made a large genealogical chart of the York and Lancaster families for Richard III, and we could still use it. They began reading this play themselves, right from the beginning. I assigned only certain scenes to be read aloud, not all of them, others we read to clear up discussion. The main interest in this play was character. I did a deal of explaining about King Richard II as background, and they said, "We should read that." When we finished Henry IV, Part I, several of the boys went on and read Part II and also Henry V, for they had liked Prince Hal, the hero king of the historical plays, best of all. Henry IV was a wonderful play to read in wartime, and the contrasting characters of Hal and Hotspur so close to the lives of senior high school students that this time the elucidation came first from the class, not from me. Falstaff they found fascinating and hard to act.

It was easy to perceive Shakespeare's originality and great understanding of character now. His ability to make drama from the events of history was also appreciated. But I myself was chiefly delighted by their ability to perceive, without my telling them, the theme of the play, honor, and their passionate attack on Falstaff's sophistry—"Can honor set a leg?", etc. They saw the weakness in the admired Hotspur's character, and the plausibility of Prince Hal's change into a real leader. By this time, taking an examination was an exciting challenge, and reading the best answers afterwards a great deal of enjoyment. Of course, I had the papers back the very next day. They wanted to know at once what I thought of their answers, and I could hardly wait to read what they had written. Incidentally, one of the boys said that these tests were all that enabled him to get through the Subject A exam. Be that as it may, I think expressing oneself in writing helps one to read more understandingly what others have written.

We had studied one farce-comedy, one a romantic comedy, one tragic-historical, and one comedy historical play, so now we undertook a first-class tragedy, Hamlet. And high time—there were only five weeks left. Very few plays when one has devoted the entire course to Shakespeare alone. But reading rapidly is in most cases, with these young students, not really reading at all. I hoped to make them enjoy the plays so much

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that they would read more and see them at any opportunity, now that they had learned how to read Shakespeare. The problem was to make them read for meaning without getting bored because they weren't getting along fast enough in the plot. Of course, many of the beauties of Shakespeare were all too lightly touched on, but I couldn't risk going too slowly, or making the task too grueling for amateurs. After all, how many of us got all of Shakespeare at a first thoughtful reading, or hearing of a play? The students heard several interpretations of crook-backed Richard at the Festival and commented on each in the light of their own interpretation. None of them seemed to have the typical student attitude of "Thank goodness! I'm through with that forever!"

A curious thing developed when we started to read "Hamlet". Whereas for Richard III and Henry IV all the students were clamoring for parts to read aloud, they were afraid to read Hamlet aloud until after they had studied it. They willingly looked up the source of the play, the period and the place, but "You start it" they said. Did this mean that they hadn't learned to read Shakespeare after all? Or had they become lazy? I was afraid I had spoiled them. I could only start in and find out. I explained the scene--costumes, lighting, etc., on the ramparts, how the ghost walked and how his appearance and voice affected an audience, interrupting the reading from time to time with questions as to who was outstanding among the friends of Hamlet on guard on the "platform", what characters they possessed, whether the talk seemed natural, why the long speech here, and the like. It was a sort of tutoring or supervised study. They kept spotting significant lines. They would come to class primed with questions of their own: "What has Laertes to do with the plot?", "How can Polonius indite those famous lines of wisdom to his son and then be so silly afterwards?", "King Claudius doesn't seem to be a villain at all." "Is the queen wicked?" They were very indignant at Polonius' advice to his daughter and thought Claudius a typical step-father in the second act. Despite the fame of this play, most of the class did not know the story at all, and none of them had ever seen it, but they wouldn't read a summary! They wanted to get it from Shakespeare himself. Instead of so much written homework, I assigned the reading of the next few scenes and a few general questions--as "What is Hamlet's problem at the end of Act I?" "Does the King suspect Hamlet's knowledge?" "Is Hamlet out of his mind temporarily?" Some days we had spirited discussions only--each person reading or quoting lines to prove his point. So often, in trying to get up a discussion of a piece of literature, I find that students think the whole effort fruitless, "merely someone's opinion" they say, regarding the meaning as anyone's guess, and not important anyway, just "busy work." So from this intense concern for Hamlet's conduct, and the interpretation of all the characters from their acts and speeches, I began to take comfort that, after all, the class was reading, even matching abilities in trying to ferret out the truth, with a complete confidence in Shakespeare's excellence of portrayal. By Act III, they were taking assigned parts home to prepare for oral reading--the class readings of this play were better than those of any other. After laughing heartily at Polonius, they were brought to a complete standstill by his tragic death;

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after praising Claudius' ability to rule in a statesmanlike way, they were compelled to revise their opinion, finding him an unscrupulous murderer, and yet a villain of a different dye from Richard III. In this play, as the action piled up, and the problem became more complicated, we kept reading backwards as well as forward, always attempting to understand the "Why". The lines, too, struck the class as superb. They had difficulty choosing which of many favorite passages to memorize. I told them there was no limit on the number of lines memorized. We borrowed some records of John Gielgud's readings and commented on his interpretation. Then we wrote character studies and read some in a symposium. After a test on Hamlet, we had a final test comparing plays, recognizing lines, interpreting figures of speech, discussing character, structure, significance and Shakespeare's achievement as an artist. This whole finale was to test three things--(1) factual knowledge; (2) creative ability; (3) reading ability.

The results showed that the students remembered all the plays and characters they had studied and had greatly improved in ability to interpret meaning--whether couched in figurative language or not. Besides, they were all imbued with a desire to see Shakespeare on the stage. Several had read some others of the plays and the last few days were spent in reading from and discussing them. They agreed that it took study to understand Shakespeare, but it was worth it.

In this long and prolix recital I have attempted to bring out these points. First, in regard to the class--the teacher will be more successful if she discovers what is their reading ability, their reading background, and their reading experience. Next, she must create an attitude of wishing to read some certain thing, or desiring to attain some definite end in reading. Two, in regard to the material--choose something which will not be completely over their heads, that is, too difficult entirely, and choose something which can be linked to their personal or reading experience. Three, in regard to the method: (1) Bring the situation or character to life for the student in a vivid way; (2) Set him to reading in order to find an answer to a question he wants to know, or to solve a problem in the situation; (3) Be sure that he is understanding the words, the long sentences, the connotation, the implications, the foreshadowings, in the story; (4) Use pictures, records, movies, newspapers to aid the understanding of what is read, but do not let them delay or sidetrack the interest; (5) Give the students something to do with their reading all the time--answer questions, explain, make a report, debate, hold a panel discussion, take a test; (6) Be very strict in requirement and return of papers so that the whole class is involved right from the first. With knowledge grows interest and once you have interest, your problem is half-solved; (7) Capitalize on the methods (not the cheap ones, of course) of advertising and good radio programs to make your questions and activities challenging; (8) Use contrast and comparison between the story read and other stories, movies, the news of the day, their own experience, in order to enable them to visualize or understand what they are reading; (9) Make vocabulary study interesting and not a drag; (10) Get the students asking questions of their own

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and make them find their own answers; (11) Vary your methods and your procedure just enough so that the class doesn't fall into too relaxed a condition of doing the work mechanically; (12) Remember that reading literature is an emotional experience, and use dramatic devices at times, if necessary, to cause the students to get that emotional experience.

A slow-reading class would demand an entirely different approach and leadership from an ordinary or a fast-reading class. My purpose in discussing the story of this class in Shakespeare has been to show that even pupils of normal ability who have an announced interest in literature can't read, that they become impatient of figurative language, that they are too prone to achieve mere recognition and only a vague impression of what is meant, and that for greater depth of comprehension a variety of stern measures are necessary. I also believe that a modicum of good reading aloud assists them to read and understand better themselves, and that memorization especially of fine poetry that means something to the student himself is an aid to reading comprehension. We had discussed Shakespeare's sonnets and the story behind them, so students at times selected for memorization particular sonnets they liked. Sometimes they asked the teacher to explain part of the meaning. One girl wrote two sonnets of her own. Linking of the literary material with subject matter in other courses expands the understanding of the class. The Latin students in my Shakespeare class became very excited over the Hecuba speech in Hamlet, for they had been reading that very sequence in Virgil's Aeneid. They explained the story to the rest of the class. They, too, had been very interested in the dramatic unities, and the influence of Seneca and Plautus on the Elizabethan playwrights. When a class is less experienced and eager to learn, all these connections with life and other courses have to be introduced more gradually, briefly, almost insidiously, until the students develop a real interest in integrating their experience. Otherwise they are only too apt to consider such widening of the application of the story a delayal of the unravelment of the plot, or even an unfair encroachment upon other studies.

In teaching reading to high school students, there are many demands; but in this paper I have attempted to show how in one situation, I made effort to meet the following:

1. Greater depth of comprehension.
2. Increased ability to evaluate and appraise what is read, as to both accuracy and literary quality.
3. Increased ability to organize ideas gained through reading.
4. Increased ability to remember and apply ideas gained through reading.
5. Increased ability to relate what is read to previous learnings and experiences.

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6. Greater fluency and effectiveness in oral reading.
7. Greater independence in attacking new words and strange concepts.
8. An extended and enriched vocabulary.
9. Greater ability to make a correct, intelligible record or report on what is read.

As with every course, when it is over, I see all too plainly the opportunities missed, the emphases too lightly skipped over, and the smallness of the amount of material covered. In this case, others might in addition note that nothing new has been added. The same old question and answer, the same old outlines, the same old tests. But, just the same, and in spite of everything, we did have a good time-- and it was the only class in school that students asked permission to visit and kept coming, to participate in without "credit".

## DEVELOPMENT OF MUSIC NOTATION

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The North American Indians cut notches in sticks as a means of recording their music. The Peruvians tied knots in string for the same purpose. Just how easy it was to sing from the notches and knots by the help of such crude notations we have of course, no means of knowing.

The Indians, however, went beyond the use of music sticks; they had music boards: flat pieces of birch bark upon which they could draw or paint their music characters. These characters, naturally, were very elementary, very limited in number. When the tune was to go up, a little figure of a man holding his hands up was drawn: when it was to continue at the same level, a sort of horizontal ladder was depicted; when the melody ascends gradually, the same ladder-like figure was drawn slanting upward from left to right. For a sudden ascent or descent, the ladder was placed in perpendicular position. There was a crude sign for a repeat, one for a pause, another for a slur. These few signs formed their musical notation. It was an attempt to depict the highness or lowness of tones in such manner that the idea might be conveyed through the aid of the eye. It attempted to draw a picture of how a tune may sound.

Whenever, as a result of expansion in the growing art of music, a need has arisen for some means of giving visual expression to it, that means has always been provided. It has always been an attempt to convey to the ear through the eye the musical pattern which the composer has had in mind and which he wishes to put in such form that it may be expressed by others. That may not be expressed in good psychological nomenclature, but that was what the Indians were after; and it is what all who have helped in the development of our present day notation have been after. Musical notation began, as did the notation of language, with picture writing.

The knot music of the Peruvians was anything but picture writing. Knot writing, however, was used by the Peruvians for other purposes; for keeping their accounts, censuses, and what not. (No pun intended.) Its function being principally a mathematical one, we may suppose that its application to music was probably for the sole purpose of indicating the rhythm of the music (so many knots, so many beats to the measure, etc.), and that it had nothing to do with its melodic content, the melodies probably being taught by rote.

We have no suggestions of any other systems of notation among primitive peoples--at least no others have as yet come to light. Nor do we find any others for a long period of time after the primitive state; not until man had made considerable progress in the development of his musical art.

The Century Dictionary defines Notation in Music as "the act, process, or result of indicating musical facts by written or printed characters,"

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and then does a good deal of explaining as to just what is meant. Further, it says: "As a process and a science, musical notation is a branch of semiotics or semiography in general." Semiotics, of course, has to do with the language of signs, but refers, specifically, to symptoms of the human body, healthy or diseased! Perhaps this may refer to the condition in which one finds himself after he has labored assiduously with the subject for a time, trying to tell in less than an hour what it took a good many centuries to bring about! The word, "Notation", is commonly used, however, as a collective term for all the signs of musical facts taken together, "musical facts" having to do with pitch, duration, force, style, performance, and so on.

If one considers words used to indicate musical performance a part of a system of musical notation, the number of characters, signs, and such word-indications as may be used is very great. In the Appendix to Webster's New International Dictionary we find three and a half columns, two columns to the page, are necessary to note the numerous varieties, they being listed under the headings, Pitch and Intervals, Time and Rhythm, Expression, Ornaments, or Graces, Abbreviations, Technique of Performance, Harmony, Tonic-sol-fa Notation, and Shaped, or Patent Notes.

Although musical notation is so familiar to us that we take much for granted, few are aware of the difficulties involved and the great amount of experimenting which had to be done before a satisfactory method of recording musical sounds was invented and finally perfected, if we can say it has been perfected. Taking into consideration the present outlook and realizing the power of adaptation which has hitherto been shown, it is probable that many changes will be made if, as, and when notation reaches any final form.

In the early stages of the development of the art, all songs and whatever of instrumental music there might have been, were transferred from the composer to the performer through the ear only. But when it became more complex some means of employing the eye as an assistant became necessary, for the memory alone could not be depended upon. Then, too, there is always present in such transference the danger of corrupting the original. For the singer, or teacher, is usually one of superior mentality and frequently has notions as to how a composition might be improved either by way of chance, addition, or omission.

Charles F. A. Williams conveniently groups methods of expressing musical sounds under two heads: (1) phonetic, and (2) diastematic. Under the first he includes the ways in which letters, figures (numerals), or words indicate the degrees of the scale, with additional signs necessary to show time values and rhythm. Under the second, the diastematic (notation by intervals), there are included those in which the highness or lowness of musical sounds may be presented to the eye by relative positions of certain signs, called neumes, figures, or notes.

In the phonetic group (phonetic in the sense in which it refers or pertains to the human voice in speech), we find evidences of its use,

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past or present, among the Hindus, the Arabs, the Chinese, the ancient Greeks, and the Romans. In this group also should be placed the Tonic-sol-fa system, that known as the Galin-Paris-Chevé (in which numerals are used for degrees of the scale), and the Tablatures.

In the diastematic group are the neumes of the early Western Church, that survival of neumatic notation which is now that of the Greek Church, the measured music of the Middle Ages, and the latter's descendant, our now familiar forms. Perhaps we might also include that of the old Israelites if we may be willing to go so far as to admit that they had any system of notation; as well as the classical notation of Japan which in some respects shows a rather striking resemblance to the old neumatic forms, and which was used long before there was any communication between that and the occidental countries.

James Henry Breasted and others insist that man finally emerged from his long period of darkness in the gorge of the Nile. If that be true (and I, for many reasons, am not disposed to dispute it), we must assume that whatever music the old Egyptians had must have been of great antiquity. From evidence furnished by their hieroglyphic writings, we assume that they had a highly developed musical system, that it played a considerable part in their religious and private life, and that its practice was extensive. Of its character in early times we know nothing for we have no evidence that any system of notation was ever known to them or used by them. More than a century ago, Sir Edward William Lane collected a number of Egyptian melodies claimed to be very old by those from whom he got them, but they quite evidently furnish no clue as to how their early music sounded.

The Hindus have but a primitive sort of notation by letters, which the scholarly Fétis declares to be the oldest in existence. Their musical theory is thorough and extensive. Based on a succession of seven tones quite like our modern major diatonic scale, designated by the first syllables of their names, significantly analogous with our do, re, mi system, their music is so involved in that mysterious and poetic construction which pervades their whole thought and civilization, that little can be made of it by the Western mind.

Mohammed expressly prohibited the practice of music on the ground that it was a dangerous enemy and rival of holiness. Hence it was never a matter with which Arabian scholars concerned themselves, except in theory; it was practiced by the Bedouins in their lonely desert places.

We have more interest in and sympathy for the music of the ancient Hebrews than for that of any contemporaneous people. Because of their relation to the Christian religion, and through our knowledge of the Old Testament, particularly the Psalms, we are inclined to attach more importance to them than to the others. Music undoubtedly played a great part in their lives. It was so intimately connected with their poetry that it could not be otherwise. For the Israelites knew nothing

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of the plastic arts; there were no native architects or artisans who were capable of building a temple for Solomon; sculpture and painting were despised and their practice considered illegal and irreligious. The old Hebrews exalted the spiritual side of life to an extent that has not been equalled since, and poured out their emotional expression in passionate lyric poetry with a coincident effusion of extemporized song--a sort of impassioned speech. Their few musical instruments with their limited capabilities made instrumental music occupy a decidedly subordinate place.

Some historians have surmised that the tones to be used were somehow indicated by the accents of the Hebrew script, but, whether the conjecture be true or not, we know of no other means of notation which they might have had. There were, however, specific directions that certain psalms were to be sung to specified melodies, but these were doubtless handed down from one generation to another by word of mouth.

While the Hebrews do not properly belong to the phonetic group being discussed, it seemed just as well to mention them with the other ancient peoples and dismiss them from further consideration.

The Chinese had a crude sort of notation, giving the names Emperor, Prime Minister, Subject, Public Business, and the Mirror of the Universe, to the five tones of their scale. This solved the problem of notation for the Chinese with whom a word and a letter are the same thing. All that was necessary was to write the single character indicating the note to be sung. Sometimes, perhaps to make for greater clarity, they would enclose a character in a little square and join the squares together by lines in the direction the tune was going.

Obviously, this nice little scheme could not be adapted to the tone names of other nations and peoples whose words sometimes contained many letters. For instance, the lowest note in the Greek system was called Proslambanomenos!

The Greeks not being able to represent in notation the names of their tones by name, used the device of letters from their alphabet, thus giving us the first arbitrary set of symbols for the notation of music, unless the accents of the Hebrew script referred to might be so considered. But one would have to do quite some "reading into" in order to make a case for it.

This attempt of the Greeks to symbolize music is more significant when we take into account the fact that they, for the first time in history, treated music as an object of beauty having artistic potentialities in itself. It is from them that we get our word Mus-ik, although with them it pertained to all of the arts--the arts of the muses. However, equally significant is the fact that the Greeks apparently made no attempt to picture musical sounds, for that which they called music was a theory; a theory of vaguely apprehended possibilities, perhaps,

but nevertheless, a theory, not a practical fact. Certainly not in the sense in which modern music is a vehicle of emotional expression.

We find music notations develop only under the pressure of the demands made by the actual practice of the art. Mere theorists seem able to get along with little other than words. Probably no greater musical theorists have ever lived than were some of the Greek scholars; we know a lot of the theory of their music; we know nothing of how it sounded. One explanation of this is that the Hellenic mind ran to plastic forms, definitely objective in the broader sense, and because of this they seemed never to be able to grasp the true mission of music, which is by far the most subjective of the arts.

Here it may be well to observe that, basically, "any art consists in the application of design to its materials." The fundamental difference between sculpture, for instance, and music is that, in the case of the former, "models for the design are found in nature," and in that of the latter (music), "no models for the design ever existed anywhere." At least, so says Finney. Nature has merely given us evidence that sounds exist; she has never arranged them in any way for us. Music is entirely the result of the workings of men's minds.

There is no question but that music played a large part in Greek life as it did in the lives of other ancient peoples. While the young Greek citizen was not compelled to study music, a knowledge of it and an ability to practice it were considered as among the most desirable cultural attainments. Pindar's odes, Homer's epic poems, were never recited except with music; it was an integral part of the drama; it had its important place in the dance, and through it a part in religious ceremony; there were contests in music which were included in the Olympic games. There was an instrumental music, not to any great extent as such, we believe (although players on the flute and the lyre are frequently given honorable mention), but as an adjunct to vocalization and poetry. We will be unable properly to grasp the place of music in Greek life unless and until we recognize the fact that Greek music and Greek poetry were one.

From as early as the seventh century B. C., Greek scholars showed a theoretical interest in the study and analysis of scale forms. This interest resulted in the development of an extensive tone-system which was determined largely by the use of the lyre. The basis of this tone-system, from the first, was the tetrachord, a four-tone scale within the limits of a perfect fourth, i.e., two and one-half steps (do to fa).

Tetrachords differed as to the location of their half-steps. The limit of the tetrachord being a perfect fourth, there were three forms which might be developed: (1) with the half-step between the first and second tones; (2) between the second and third; (3) between the third and fourth.

There were also three "genera" or species, additional ways of divid-

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ing it; the diatonic, in which there were two steps and a half-step, and which was most favored; the chromatic, with an extra long step and two half steps; the enharmonic, with a double step and two quarter-steps.

The octave was recognized, consisting of the combination of two tetrachords with the addition of a whole step. Tones were reckoned downward instead of upward as in modern music.

The "Complete System", as it is called, was a scheme of tones comprising two octaves and was composed of four Dorian tetrachords, with the various species of modes imbedded in it, each including a particular octave. While this form was considered as standard, in practice the singer might transpose its supposed absolute pitch to one either higher or lower. Each such transposition was thought to have a character of its own even though the relation of the tones remained the same.

As has been said, the Greeks developed a sort of notation consisting almost entirely of letters from their alphabet, which they applied to this complex system. Each sound could be notated by two characters (or letters), one for the voice and one for the instrument. These characters had no rhythmic significance (the rhythm being determined by the verbal text), and indicated only relative pitch, that is, pitch in relation to the other tones of the system. For this purpose all of the twenty-four letters of their alphabet were used, supplemented by their use upside down or sidewise, and by various other signs. These other signs were for the purpose of indicating silence or rest, and included some small marks to indicate the length of tones.

Two sets of letters were used, one above the words to indicate the part which was to be sung, and the other below to show the instrumental part. It was wholly inadequate for any extensive use in actual practice. Although, it is said, at the height of the Greek musical development there were as many as 1240 different characters used, "at best", continues Hawkins, "they were the letters of the Greek alphabet reduced to deformity."

The failure of the Greeks to develop any extensive system of applied music precluded the building of an adequate system of notation. The character of their music was such that but little was necessary; there was no effort made to picture the sounds made.

The Romans were not an artistic people; they created nothing. All of their art works were either borrowed or stolen from other peoples, and they debauched everything they touched. The purpose of music to them was limited to the debasing practices of a degenerate people; they contributed nothing.

It is not easy to trace, let alone describe, the transition from the decline of Greek music to that of the twelfth to the fourteenth centuries. We know something of it, not much, it is true, something of both ends of the period, but for about a thousand years there is little

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that may be adequately said. The discernable personalities of the period are pitifully few and there is little music extant.

Following its period of greatest conquest and prosperity in the second century, the Roman Empire started on its road to disintegration. When in the fourth and fifth centuries the Goths, Vandals, and Huns drove the seat of government from Rome to Byzantium, and in the following two centuries the rise of Mohammedanism swept over the Near East and Northern Africa finally reaching Spain, the cataclysmic changes destroyed all continuity of civilized life and thought; any development of the fine arts was impossible.

It is amazing that Christianity was able to make any advances during such a time, but it did. It became the official religion of the Empire under Constantine in the fourth century and then spread to the North and West. It became a mighty social institution, and, adopting the Roman pattern of organization, it not only attempted to arrange a gradation of authority in its officials, but developed an order of procedure for its services of worship which evolved into the liturgy which now stands, in principle at least, in our Western churches. Because of the turmoil in civil life, it was only among the clerics that any peaceful pursuits such as an interest in learning could be carried on. During those Dark Ages the Church was the one intellectual light which was kept burning, for it was only the cathedrals and other religious houses that could possibly be considered as repositories of learning.

There are three hypotheses as to the source of our early Christian music: (1) that it was the result of the new faith; (2) that it was an inheritance from the Hebrews; (3) that it was borrowed from the Greeks. Without discussing the merits of each contention, it may be said that the third hypothesis is quite generally accepted by scholars, although the second doubtless had some bearing. While it is probably true the Jewish Christians followed synagogue customs, inasmuch as there were more non-Jewish than Jewish converts to the new faith, the technical forms of the Greeks were employed. While the Psalms, as well as newer hymns, were used in the services, the Psalms were in the Greek version and the earliest Christian hymns came from the East where the Greek was the common language.

The emphasis upon organization led to elaboration and uniformity of liturgy, as well as fixity of creed, and this resulted in a demand for richness and formality. Because of the important place music occupied, the development called for new and increasing attention to it.

The center of activity being Constantinople where Greek music thrived as the recognized type, the transference to Italy of the unison style of singing is not to be wondered at. We cannot trace the evolution in detail, but we do know that the mediæval Church had a profusion of melodies which were fitted not only to metrical poetry but to prose texts as well.

The music of the ritual must have grown up through many different experiences and in many different places. The system became fixed, allowing, of course, for modifications from time to time. It is remarkable, however, that so few changes were made. But no longer was it possible to get along without a system of notation which would allow of expansion in the meeting of new conditions.

Tradition has it that Bishop Ambrose of Milan (d 397) and Pope Gregory the Great (d 604) were the outstanding leaders in the music movement within the Church, the latter being acclaimed as the founder and organizer of the "Gregorian style", to this day the only form of music prescribed for use in the Roman Church, although considerable latitude has been tolerated at times. These traditions, however, must be treated as traditions; most scholars believe that the Gregorian system did not come into flower until the eighth century or later, and that these names represent a movement rather than actual contributions by individuals.

This is no time to discuss the Gregorian style other than to say that it originated for liturgical reasons and that we must admit it was a remarkable example of melodic invention and beauty as it stood in the early Middle Ages.

The basis of its tone-system followed that of the Greeks, but by the eleventh century it had expanded into an even more extended one than their "Complete System". To facilitate practice, the well-known Ut, re, mi, fa, sol, la syllables were used (taken from the tune sung to a hymn to John the Baptist), and to facilitate learning and using the system, the Guidonian Hand was invented. This Guidonian Hand, perhaps the first chart ever used in teaching assigned various tones to joints of the thumb and finger so that each tone might be associated with a particular location. While this was not a notation, it was a conscious attempt to use the eye as an aid in conveying musical thought.

Some one, earlier than Gregory, had attempted to provide a simple form of notation by following the Greek device of using letters, but he reduced the number of letters used from twenty-four to fifteen. Gregory is credited with having reduced this earlier practice of using the first fifteen capital letters of the Latin alphabet, A to P (they have no J) to seven, recognizing the fact that certain tones of the scale were but repetitions (transpositions) of others. It was therefore extended to provide for more than an octave by the use of small letters (a, b, c, etc.) and small letters in couplets (aa, bb, cc, etc.). The weakness of the Latin system was that it was written in a lineal position thereby making no provision for the relative highness or lowness of sounds. It also proved quite inadequate owing to the rapid increase of melodies, both in character and extent. All variations and expansions of notations are determined by the development of the music whose meaning it is its function to convey.

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The alphabet system functioned largely as a reference to the different tetrachords used, having little, if anything, to do with a scale as such. The need for recording music in writing becoming pressing, the device used in rhetoric, of indicating the rise or fall of the voice by means of accents, was resorted to. A rise in the speaker's voice was indicated by an upward stroke of the pen, the reverse for a fall, and the two were joined, making a circumflex, when there was both a rise and fall on a single syllable. They indicated, pictorially, the rise and fall of the voice--the highness or lowness of sounds. This very elementary form of notation seems to have originated in the East and was apparently applied to melodies in the latter part of the seventh century. Its adoption was but a natural result of the use of prose texts from the Scriptures, which had no metre and which differed from rhetorical speech only in that the musical scale regulated the modulation of the voice.

Additions to these simple markings became necessary so that by the ninth century there had arisen an organized system designated by the word neume, from the Greek word, Neuma, a "nod", or "sign".

In early mss. now extant in which neumes appear, there are in addition to the elementary signs mentioned, points and dashes for mono-tone passages as well as compound curves for complex progressions, and so on. In appearance neume notation resembles, somewhat, modern stenographic notes. Of course, in different places and stages of development the forms varied--they varied with the writer (cp. stenographers!) and the style of his time.

As time went on, however, the neumes tended to become more regular and exact, so that we have an authentic record and one fairly intelligible. At least numerous photographic reproductions, published by the Benedictine monks of Solesmes, indicate that the old Church melodies, whose structure is known through the familiar square notation on a four-line staff, are the same as those notated in the old neumatic writing prior to the tenth century.

Two mental processes, recognition and deduction, must be gone through if any notation is to be translated into conception. The brain must recognize certain symbols presented to it through the eye in order that their mutual relationship may deduce the corresponding relationship of the musical elements they represent. Pitch relationships are absolutely represented in the phonetic notations, but in the diastematic they are but approximated, and for deduction, memory and guessing are substituted.

In order to render this deficiency, the staff, that essential element in our modern notation, was evolved. Doubtless the fact that it endeavors to picture pitch relationships is the reason that it today holds its place of predominance over such phonetic systems as the Tonic-solfé and the Galin-Paris-Chevé.

Writing music in neumes was the first in the development of dia-

tematic systems. The primitive one-line staff was probably the result more of accident than design. The function of the neumes being to indicate relative pitches, it was highly desirable that they be evenly spaced. So it was that a great advance was made when some copyist in the tenth century drew a line with his thumb nail, upon which, as well as above and below, he wrote his characters.

From this it was but a step to the use of two or more lines. To make their significance evident the lines were marked, very early in the development, with the letter-names of the tones to which they were assigned. Those most used were F, C, and G, and it is from this use of those old mediaeval characters (letters) that our modern clef signs have developed.

The use of letter-names for tones was a parallel development with the growth of neumatic writing. As has been said, the fifteen letters used in the early days were reduced in number to seven (A to G, as now), these being repeated in successive octaves. The exact tone with which such octaves began was not necessarily A, but might be any one chosen as a starting point. The series always progressed upward from the lowest tone, the reverse of the Greek practice.

As the tonal system developed (i.e. as key relationships began to be recognized) a need was felt for both B and B<sup>b</sup> which had been distinguished by two forms, differently shaped, and known as B durum (square B) and B molle (round B). From the first we get our natural sign and, possibly our sharp sign, and from the second we get our flat sign. (The Germans call B natural, "H". That is how it was possible for a fugue to be composed on the letters of Bach's name.)

It should be said that while the letter notation was first developed for instruments, its convenience soon led to its adoption for singing as well.

A further word should also be said about the development of the staff. The scratched line of the scribe did not prove sufficiently definite, so the use of color, a further aid to the eye, was employed. To these colored lines, one red and the other yellow, the letters F and C were affixed, and this color device continued in use for quite some time. Again, this proved to be unsatisfactory--it was not enough.

Some genius hit upon a scheme of using several lines, on the spaces between which he wrote the syllables to be sung. In order to conform with the scale progression he marked the spaces each with a letter T or S (tone, semi-tone) to indicate either a whole step or a half-step. This was another great advance in the effort to make music look as it should sound. We find staves with lines numbering from two to eleven; not all, however, used for the purpose just related. The eleven-line staff, being too cumbersome, was eventually made into four-line and five-line staves; both are in use today; the four-line for formal ecclesiastical use (plainsong), and the two five-line ones with the C line between for all other purposes. In the period being discussed, it

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should be said, the four-line staff was used for the music of the Church and the five-line for secular music.

With these devices, the staff, the clef, and the natural and flat signs, the problem of the notation of pitch relationships was practically overcome, and later additions were little other than adaptations and amplifications of this material.

However, the practice of singing in parts, crude as were the earliest experiments, called for drastic amplification and change of the then quite satisfactory system, for there was now involved an entirely new element--that of time. Obviously, if two or more persons were to sing together in different melodies, or parts, some agreement as to the length of time each should hold a note became a necessity. The first step was to agree upon and select certain known characters to represent long and short sounds.

An interesting speculation as to the derivation of the shapes of the musical figures(notes) we now use (or, rather, their immediate predecessors) is that they also came from the characters representing the two B's, viz., the square and the round. The square B was simply turned on its side and lengthened; the other divested of its stem, leaving it a simple circle. The first became the breve and the second the semi-breve. These notes had fixed relative time values: the first twice the length of the second. The two, used together, regardless of the order, gave a triple time differing only in accent as in the poetic metres, trochaic and iambic.

Inasmuch as some means of indicating duple-time was necessary, signs of augmentation were invented, viz., the old device of a tail on the note, the dot, and the hold.

Other serious problems had to be solved: that resulting from the introduction of chromatic tones: the finding of some means of indicating lessened time values of the notes. Pauses, or rests, also needed to be indicated, the latter especially so now that more than one voice was used.

In order to care for certain other niceties (or for the purpose of showing diminution) "void" characters (white in place of black--they were said to be "evacuated") came into use; the cutting off of half of either "full" or "evacuated" notes; the use of red instead of black for coloring. This last, however, didn't always work, for an author notes, "The diversities of time may be noted by red characters when you have the wherewithal to make red characters, and these also it is allowed to evacuate."

The problem of differentiating between Perfect and Imperfect time was a somewhat knotty problem because of the few notes available.

A word of explanation should be given here. In the writings of

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those who treated the subject *Cantus Measurabilis*, the attribute of perfection was always ascribed to three-part time. Therefore three-part time was known as Tempus perfectum, and it naturally followed that two-part time would be known as Tempus imperfectum. Why this was so may be gathered from some writing of one Franchinus Gaffurius, a fifteenth century Italian, who was held in high esteem by his musical contemporaries and from whose writings John Hawkins quotes at length. Franchinus's explanation, naive as it is to modern readers, is an interesting example of the labored reasoning of his time:

"The Ternary number in the quantities of this kind is esteemed perfect, first, because the Binary number is ever accounted feminine, whereas this, which is the first uneven number, is said to be masculine; and by the alternate coupling of these two the rest of those numbers are produced. Secondly, it is composed of both Aliquot and Aliquant parts. Thirdly, there is a relation between the numbers, 1, 2, 3, as they follow in the natural order, which, as St. Augustine testifies, is not to be found between any others; for, not to mention that between them no number can intervene, 3 is made up of the two numbers preceding, which cannot be said of 4 or 5; nor of those that follow them. Fourthly, there is a threefold equality in the number 3, for its beginning, middle, and end are precisely the same; and by means thereof we discern the Divine Trinity in the supreme God. Lastly, there is a perfection in the number 3, arising from this property, if you multiply 3 by 2, or 2 by 3, the product will be six, which mathematicians pronounce to be a perfect number in respect of its aliquot parts."

Then there was the problem of Mode, Time, and Prolation, terms having to do with the time lengths of the various notes. To each of these terms might be annexed the words Perfect or Imperfect. It being necessary to have signs to indicate the Modes, a circle, a circle with a dot in it, and a half-circle with a dot in it were used. There was so much dissension and diversity of opinion expressed as to what these signs really did mean that exact translation of the old melodies is next to, if not quite, impossible. At best they can be only approximated. Also, in the attempt to make things clearer, the numbers 3 or 2 were added to the circular characters in order to indicate their perfection or imperfection. Thus, O 33, all were perfect; O 32, first two perfect, the last imperfect; C 22, all imperfect, etc. We are told "that the number doth signify the mode, the circle the time, and the presence or absence of the poynt(dot) the prolation."

Why all this expansion? The invention "was new, it was received with great approbation and immediately spread throughout all Europe; the utility of it was universally acknowledged, and men were fond of refining upon, and improving a contrivance simple and ingenious; but they carried their refinements too far, and we are now convinced that the greater part of what has been written on the subject since the time of De Muris (14th century) might very well have been spared."

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The new style of song, known as *Cantus Measurabilis* (measured song), is supposed to have been invented by one Franco about the year 1060; and it is certain that Guido reformed the scale about the year 1028. It is very remarkable that two such considerable improvements in music should be made so nearly together as that the difference in point of time between the one and the other should have been less than forty years. An explanation may be that the needs for such improvements, and others, had been accumulating for centuries; active minds were searching for ways and means of overcoming difficulties. It was inevitable that some such means would not be discovered.

Whilst, in the long run, the general line of progress has always been in the direction of simplicity, the immediate effect of innovations from time to time has been quite the opposite, often leading to complicated systems which historians have found difficulty in explaining.

The basis of the mensural system "became highly complicated as time advanced and the system extended, so much so indeed that the author's explanation of it will frequently be found to constitute the principal part of his thesis; and if we judge from the strength and directness of the reproaches sometimes levelled by learned theorists at those of their brethren who were so unfortunate as to differ from them, we may even suppose that considerable warmth of feeling was sometimes aroused by questions as to the more or less logical expression in notes of a musical phrase or formula. Yet, though we may often regret that the discussion of these was so much indulged in by theorists, and carried on often to the exclusion of information with regard to other matters which we would willingly possess, we must admit that the discussions were generally founded upon real distinctions, and were therefore in a sense necessary to the building up of a method of considerable importance not only for the time being but also for the future; for the simple system, which in our own day serves for the presentation of rhythms far more intricate than any with which the mediaeval composers were called upon to deal, it undoubtedly derived, through a continuous process of pruning and simplification, from the elaborate finished method of the thirteenth century." —Wooldridge, Pt. I, p. 114.

Apropos of what Wooldridge has to say about controversy: One John Wylde, c.1400, in a tract of considerable length, pays his respects to the combat over the B square and the B round. Hawkins comments that "his 'relation' of this "can no more be read with a serious countenance than his learned argument tending to prove the resemblance of Leah and Rachel to the tone and semitone, and that the sons of Jacob were produced in much the same manner as the musical consonances."

Cutting the breve in two (from the lower left hand corner to the upper right) gave a right triangle-shaped note. Being difficult to make easily, copyists made it into a lozenge shape which, when "evacuated", and with a tail added, gave us the white parent of our round half note.

A reason for the square black note was a very practical one. Owing

to the labor involved, but one book was made for the use of the choir, it being placed on a large stand in view of all of its members; the heavy black note was easily seen. Flags were added to the tails of the notes for the purpose of indicating diminution.

Staves, clefs, and notes are necessary for the picturing of sounds; time and key indications are not, though for obvious reasons are desirable. Marks of expression, whether symbols or words, are but accessories; helpful, but not essential.

Tablatures are simply charts; cumbersome, but usually easily understood devices for picturing instrumental music. The little figures printed above the vocal score of much of today's popular music, indicating the particular frets and strings of the musical instruments upon which the fingers should be placed for playing the proper chords, are but a form of tablature. Since the invention of the tablature (it was in general use from the 15th to the 18th centuries), its use has been continuous though neither general nor wide-spread in the last century and a half.

Tonic-sol-fa notation, never able to make much headway in this country although widely used in England, is but a simple linear notation without the use of staff lines, making use of the syllables, do, re, mi, etc., indicating specific pitches. The Galin-Paris-Chevé system follows the same principle but uses figures instead of syllables.

Shaped, or patent notes, sometimes called "wheat notes" by our grandparents, were widely used in many sections of our country than is commonly supposed, lend themselves to a system of notation which is based on sound pedagogical principles. George Pullen Jackson, in his White Spirituals in the Southern Uplands, writes:

"The singing-school teachers' reasoning, as a basis for their notational improvement in the interest of beginning singers, was fundamentally sound. They saw rightly that the singer, in beginning to learn a new tune or a harmonic part, looked up the key signature, located the tonic, and then oriented the successive notes in the light of his knowledge of the scale structure, his feeling for the size of pitch intervals and for tonal relationship or melodic character. The teachers saw, in other words, that the singer's establishment of the tonic fa and its related notes--and this without the help of harmonic instruments--was a process involving reasoning, reckoning, and musical feeling. And they concluded that a system of giving to each note-head a characteristic shape--one that would reduce reasoning and reckoning processes by showing instantly that the particular note in question was fa, sol, la, or mi, leaving the singer simply to the exercise of his melodic feeling--would simplify his learning to sing."

Its use is limited to notating vocal music. It is an American invention

and, so far as I know, has not found favor abroad. While there are many objections to its use, it does make for ease in reading. The most accurate and rapid readers I have ever seen are those who make use of this system. Some of the feats of reading, in parts, that I have witnessed, are quite amazing.

A word should be said about a sort of notation called, variously, "figured-bass", "thorough-bass", or "basso continuo". It was based upon the melodic implication of a harmonic sequence. That is, a melody may have not only beauty and interest of itself; it implies an underlying harmony. As popular music, in the past, did much to bring into view the artistic possibilities of the solo, a new attention and interest was shown in accompaniments. The function of an accompaniment might be something other than to add something in the nature of an additional melody—it might "declare the chord-foundation that the melody implied." It was found that this implied harmony might easily be indicated by a continuous bass, i.e., the single bass note, with figures placed above the note laying out the plan of the chord to be played. It was received with great favor and was widely used.

The successive results of the labors of the neume writers, those of measured music, the makers of tablatures and other notational devices, together with the impetus given to all composers by the rise of instrumental and dramatic music during the seventeenth and eighteenth centuries, are a musical notation that is now accepted by the whole civilized world. It may be applied to instruments or voices, it is easily learned by those who are in the least musical, it may be expanded to meet new requirements. Its very inconsistencies are an assistance to the eye of the reader for too great uniformity would be confusing. It is a remarkably simple, workable system.

The jazz era has seen certain innovations which, while perhaps but temporary expedients, are interesting and are doubtless indications of a movement toward further simplification of our already satisfactorily simple system. Much of the ultra-modern jazz(swing?) is improvisation, so only general notational suggestions are made. For instance, in the "special" arrangements (as opposed to "stock") of tunes for jazz bands, the pianist is provided a score upon the staff of which short vertical lines are drawn indicating the number of chords to be played per measure, with the name of the chord written above, a sort of modern application of the old figured-bass. Suppose the key is A<sup>b</sup>; there may be two measures marked A<sup>b</sup>, two marked E<sup>b</sup>7, F, or whatever harmonic structure is desired, and so on. But it merely indicates such basic harmonies; the player is allowed all the latitude he can cover. In other words, the harmonic structure is indicated; the player improvises. The parts for the other instruments are notated the same as for other types of composition, but when an instrumentalist has a solo (where he stands and has the spot light turned on him) the only thing he has to go by is "trumpet take off." Of course, any instrument may be indicated. That is the reason there is so much variation in the playing of the same composition.

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by different bands, as well as why individual bands vary their own renditions and interpretations. It is a modern instrumental variant of the old mediaeval extemporaneous descant, the forerunner of the old organum, faux bourdon, etc., which led to the development of measured music, and which brought significant changes in notation.

It is not wise to make any predictions as to what may happen to the notation of the near or distant future; we shall see what we shall see.

## MUSIC: A FORM OF READING

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I once went to hear a young Negro lecture. I shall never forget his first words. He was a fine looking young fellow who stood a moment before his audience without saying anything. Then, suddenly, seemed to me, he said, "I'm a problem. Did any of you ever know what it meant to be a problem? I don't think you know anything at all about it."

Now, I'm not a Negro, and I'm not a problem(I hope), but in one respect, a sort of lefthanded one, perhaps, our cases are similer. The only difference is that he was talking to a group about that of which they knew nothing and I am talking to a group about that of which I know nothing.

It is quite the vogue now to study semantics, the science of meanings. It may be well that it is so. For myself, I have decided definitely that it is so.

In the preparation of this paper I read all of the books, papers, articles, and so on having to do with the subject that I could find. And I do not know but that it has interfered a good bit with its preparation; it probably would have been a better paper had I not read so many. Most of them were technical works dealing with teaching and the language used in writing them was, in many cases highly technical. I found it necessary to consult my dictionary so often that I fear I frequently lost the trend of what I was trying to read. On one page in one book I noted nine words I had never seen before and four of them were not to be found in any dictionary I consulted! I have been trying to get at the meaning of the words used; but about all I have been able to accomplish is to have arrived at the conclusion that I do not even know what "mean" means. I've just read a book, Philosophy in a New Key, in which the author, Susanne K. Langer, has taken four pages to explain her meaning of "meaning". I have also come to another conclusion: we have too many words, by far; or we try to use too many of them.

We might, to our advantage, learn something from the colored man of the deep South--he of the field-hand type. During the past two hundred years he has succeeded in doing something tht the white man hasn't been able to do in two thousand years, according to Ruark Bradford (who knows him about as well as anyone can), namely, created a language for himself that is perhaps more expressive and less verbose than any other extant. Bradford goes on to say:

"As nearly as I can learn from research, the black people brought to America with them approximately nothing in the way of civilization. Their language, if any, was tribal of nature and too primitive for permanence. ...Here their masters' language was harsh, inexpressive,

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unwieldly jumbles of sound that could be represented by twenty-six letters of the alphabet. The Negro softened it, amplified it, abbreviated it, simplified it, and generally adapted it to his own sense of the appropriate to such an extent that even the most ignorant Negro can get more said with a half dozen words than the average United States Senator can say in a two-hour speech." Recently, in a Ft. Worth home, when I asked the Negro maid if she sang, she replied, "Yassir, I sings behin' de sermon." I knew exactly what she meant; I could at once picture the whole scene; meeting house, preacher, and this girl singing after his sermon.

I had a good teacher once who was doing excellent work by way of achieving results, i.e., making her students play well, until I gave her a book to read about how one might improve his teaching. She had never before heard of "blockages in learning"--plateaus, regressions, spurts, etc., but as a result of reading the book she became so interested in looking for them that she forgot to teach her students how to play the piano. A little knowledge is a dangerous thing. I shall probably demonstrate the truth of that statement before I get through.

I could quarrel with those who misuse words. We frequently obscure meaning rather than the reverse by our use of words which have a double meaning or are ambiguous, or which are just high-sounding. The word "score" is an example of the latter. Those who write books about the teaching of music in our public schools are particular offenders. The word "score" is too often used when "part" is meant. Score doesn't refer to a simple little song used in the elementary grades, or to a part for a violin. Talking about the "mastery of the score" in the 3d, 4th, 5th, or 6th grade is simply nonsense. It is high-sounding; its use gives an impression of learning to the uninitiated.

"Mind-set", the noun for example, which one writer used with abandon, is an equivocal word, capable of double interpretation. Rather than use that word it would be so much more helpful had he referred either to a "strong current of the mind in one direction," or "a fixed or firm state of mind." There is quite a difference; one wasn't quite sure always in which sense he was using it. But "mind-set" has a learned sound! Yes, it is a good thing we are becoming more interested in semantics.

What is music? There are many definitions, most of them unsatisfactory. A simple one is that it is an artistic combination of rhythm(time), melody, and harmony, together with that indefinite and undefinable thing called expression. Can we write that? If so, can we read it? In the sense in which we read other things?

What is reading? According to my Century it is "to observe and apprehend the meaning of (something written, printed, inscribed, or stamped in letters or other significant characters): go over with the eyes and take in the meaning of (significant characters, forming or representing words or sentences); . . . ; as to read a book, newspaper, poem,

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inscription, or piece of music.)" Also, "to perceive or assume in the reading or study of a book or writing something not expressed or directly indicated. . . etc.," this definition referring especially to "reading into", and applying directly to the element of expression in music. There is also the specific definition: "In music: (a) To perform or render music at first sight of the notes; applied to either vocal or instrumental performance; as, he plays well but reads very slowly. (b) to perform or render music in a particular way; put a certain expression upon it; interpret it" (this used of a performer or conductor).

We are not dealing with things when we read music in the sense in which we do when we read words, mathematical symbols, scientific formulae, etc. A mathematical demonstration is the same to all. Not so written music. We cannot compare the mental reactions from reading music with that from reading mathematical symbols. Anatole France has said that "every book has as many copies as there are readers." So with written music; it is not the same to all.

Further, we are dealing with the subjective, not the objective. Edward Dickinson says:

"No object in a picture, no sculptured figure, is absolutely new in the sense that it bears no resemblance, in the whole or in its parts, to anything we have ever seen; the words and images of poetry must be reminiscent of previous acquaintance or else they are unintelligible. A musical phrase, however, has no counterpart in our experience; it is unprecedented and unique. Its action upon our feeling is direct, not indirect."

It has a less obvious relation to actual life than has any of the other arts--its predominant appeal is to the senses. Says Walt Whitman:

"All music is what awakes from you when you are reminded by the instruments. It is not the violins and the cornets, it is not the oboe and the beating drums, nor the score of the baritone singer singing his romanza, nor that of the men's chorus, nor that of the women's chorus. It is nearer and farther than they."

I assume that all here have some knowledge of reading music, or at least know what one means when he uses that term. Music reading requires a knowledge of our quite complicated system of notation, a system which represents, both directly and indirectly, a musical structure. It implies not only an ability to interpret the printed symbols but a good deal more.

There are many reasons why an ability to read music is a desirable cultural asset, and others as to why it is desirable to do it well and to do it intelligently. While one may be a member of a chorus and not

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be able to read very well, he will be a much more valuable member if he is able to do so. Ability to read is a necessity if one is to participate in any worthwhile instrumental ensemble. This ability is also a decided aid to intelligent listening to music--can add to both its pleasure and educative value, and should one care to write out his own musical ideas he must be familiar with their notative symbols. While, obviously, it is a necessity for the professional, it is a highly desirable acquisition for the amateur.

Problems of teaching pupils to read music involve three things: (1) to read in the commonly accepted sense of the term; (2) to follow the printed music intelligently; (3) to be able to write it.

That the psychology of reading music has not yet been adequately explored will be evident to anyone who reads what has been written on the subject. Because of the very nature of music its reading problems cannot be compared with those involved in reading the printed word. In the first place, we have to deal with characters which have to be interpreted for whatever interpretation they may have, through the senses--not with letters from which words having definite meanings and connotations can be formed. Then there are the gradations of tone quality(timbre) which are implied; the rhythmic element does not enter in language reading as it does in music.

Commenting on the laboratory analysis of methods exhibited in learning, Charles H. Judd refers to the experiments in photographing the movements of the eye as it moves along a line of printed matter, and says that these movements are much better indicators of the nervous reactions of the reader when he tries to interpret the words he reads than are the movements of articulation he makes when he pronounces the words orally. And then he says:

"Oral pronunciation is a remote process following the recognition of words after so long an interval that other factors, such as the physiological limitations of vocal action, obscure the true reading process. Eye movements, on the other hand, are very closely related to the reader's efforts to comprehend passages. Photographic records of the eye movements show among other facts that there is a marked difference between the individual's mental process when he is reading silently and when he is reading orally. Silent reading makes possible attention to large units. Whole phrases are apprehended at a single glance. In oral reading on the other hand, attention is relatively fragmentary, controlled by the necessity of separate pronunciation of each sound."

For many reasons the eye-movement tests which have been made are technically much more difficult in music and a mistake will be made if too much is inferred from those of the character of which Dr. Judd speaks. As it actually works out, by far the greater part of our reading music is oral, i.e., it is played or sung. We have not yet sufficiently emphasized the fact that it should be used more as an aid to

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listening, or even the further possibility of its use for its own sake. But more of that later.

Satisfactory reading tests have not yet been developed; at least not any which may be intelligently diagnosed.

The prime purpose of a teacher of music reading should be to teach the pupils to read music. All agree upon that but there appears to be a sad lack of agreement among experts as to how it may be done. Most of the experts seem to show more interest in the method used than in the result obtained, particularly so when one talks about his own method.

Alma M. Norton, Teaching School Music, 1932, thinks "it is desirable that pupils attain sufficient reading ability to be able to obtain meanings from a music score," and then naively remarks, "How to achieve this is the music teachers' problem." She also says this very significant thing: "The effort to teach all children to read music has been far from successful."

That the problems are many and varied all frankly admit. And there are plenty of excuses as to the cause of failure, namely, (1) poor material; (2) emphasis on process rather than on music itself; (3) too much time spent in teaching technique of music--over-emphasis on sight-reading ability; (4) too much drill and method and not enough pleasure in participation; (5) texts of songs used differ too much in character from corresponding literature used; and many others. It is easy to find excuses, but the world doesn't want excuses--it wants results.

A very good paragraph in Alma Norton's book is this (although I do not agree with all of it):

"Reading music must come to be looked upon as a procedure and not a thing in which pupils should engage for its own sake. If pupils are to prepare a plot of ground for a garden we can scarcely expect them to be interested for long in detailed lessons on the manner of holding and wielding the hoe. The interest will be found, not in the way the strokes are made, but in the result of a suitable piece of ground."

Now that is all right provided the pupil gets enough instruction in the use of the hoe; otherwise he may cut off a toe or two. Then he won't have much interest in whether or not there is a garden, let alone "a suitable piece of ground." This is better: "The point of interest is the result, not the procedure. The case in the music reading problem is sufficiently parallel. Music teachers have struggled for years to develop a consuming desire on the part of the children to read music. Having so far failed they have turned to offering results as a stimulus instead of procedure, or songs read for a purpose instead of lessons read in order to read."

We have surprisingly good examples of music production in choirs,

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orchestras, and other organizations in our schools, a result of "stimulus instead of procedure", perhaps. But such excellence is the result of drill, drill, drill, perhaps to an extent which interferes with more important teaching, and it is certainly no evidence of ability to read. One wonders if there may not be too much "stimulus". Exactly the same argument against drill in the lower grades may be made against the drill to which "show" or "display" groups are subjected later. Most of the a cappella work, for instance, judged by its quality, does not warrant the time expended upon it; it is evidence of hot-house care, not reading ability. It is to be suspected that most of the exploitation of "show" groups is undertaken for the purpose of highlighting the teacher rather than for that of benefitting the pupil.

Now, what is being done? There is the "note-wise" vs. the "phrase-wise" controversy. As simply as I can state it, the question is whether the old-fashioned way of teaching scales, syllables, and various notation symbols such as time and key signatures and so on shall be taught first, or whether the pupil should first be taught to think in terms of the musical phrase.

In the newer attempts to teach children to read music there seems to be a tendency to have the learner give his entire attention to what has been termed the "significant elements of musical meaning", namely, the structure of the phrases, the rhythmic structure, the harmonic content, and the like, treating such things as scales, intervals, key signatures, time signatures, etc., merely incidentally. I'm not so sure of the validity of such teaching. After all, some pretty good musicians were developed under some of the old methods, mis-called the "analytic method" by one writer. One might mention the Three B's of music--Bach, Beethoven, Brahms, and a host of others. The best readers of vocal music I have ever seen have been some of the shaped-note users in our own Southland, who probably have never heard of a phrase.

I said "mis-called 'analytic method'" purposely a moment ago, because it is just that. Analysis comes after the creation and growth of a thing (anything, whatever it may be), not before. Strictly speaking, is not the "analytic method" exactly what the proponents of the "phrase-wise" method are using? The pupil becomes familiar with the song or other piece of music and then tears it down to discover how it was made. That's what analysis is: the separation of anything into its constituent parts or elements. I have no quarrel with those who would introduce notation after musical experience, if for no other reason that it cannot be done otherwise. More mountains are made from fewer mole-hills in teaching music, especially public school music, than in any other branch of education I know anything about.

Mursell makes much of this "phrase-first" business. He says at the beginning all attention should be focused upon the phrase; say nothing about the notes--it is not even necessary to give them names. Also, pay no attention to either key or time signatures, or clefs, or bars, or

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any of the other elements which enter into the notational system. Make the phrase stand out, says he, and let later developments consist "of progressively analyzing out and bringing to the focus of attention more and more of the complex indications of the score." I haven't the slightest idea of what he is talking about when he uses the words quoted. Somebody else had difficulty understanding it, too, for some unknown reader had marked this passage with a question mark in the copy of Music Education, Thirty-fifth Yearbook, Part II, page 102, which came into my hands.

Mursell and Glenn in their Psychology of School Music Teaching, Silver, Burdett and Co., 1931, p. 222, have this to say:

"We work towards the reading of music as contrasted with the spelling of notes. Some of the work in reading music in the grades would be much better adapted to create ability for proofreading than for musical expression. In reading, a total grasp of the phrase is essential, and the making of note errors is a secondary matter. (Italics mine). A note error in early reading is important only in so far as it indicates a failure to grasp the total phrase. As a matter of fact the sort of reading which a choir director or a conservatory teacher would like to see possessed by his pupils, and which an accompanist needs, is one which involves rapid and sure grasp of the meaning and sweep of the phrase rather than a painful note-by-note accuracy. This phrase grasp is the essential mark of the really expert reader, who creates musical effects from the score rather than by spelling it out note by note."

That is rather interestingly put. But this "phrase grasp" business by itself, if not underlaid by a good bit of just good, plain, old-fashioned note-by-note reading, is apt to do queer things. I know a choir director who refused to give a position to an excellent musician, an organist, for the reason that the candidate for the job was a good reader in the phrase-grasping sense, but inaccurate as to the notes he played. Apparently it did make some difference to the choir director as to how the music sounded. The "making of note errors" may be "a secondary matter", but it makes the music sound funny!

And I know of a well-known conservatory teacher whom you would all know, or know about, if I should mention his name, who allowed his accompanist to play the accompaniment to the first part of "My heart at thy sweet voice" in triplets instead of quadruplets! And in concert! I knew her well; she had been taught to "grasp the phrase". That is an illustration of what such silly advice results in—sloppy reading, nothing else.

This makes one wonder if modern methods of teaching spelling are successful. If so, there is little evidence in the product, judging from my experience with a good many stenographers. (A recent tryout spelled it Holesale!) Maybe spelling isn't an accomplishment to be desired; I don't know. Will Earhart, in The Meaning and Teaching of

Music, Witmark, 1935, says that "the teacher may teach all the words of the spelling-book or the dictionary, but the child will not read except by reading; and that reading—and the very idea of reading—is caught from hearing reading done. Sooner or later a child must be introduced by imitation into that continuous sweep of thought which is comparable to the flight of a bird. The curve of the flight can be broken theoretically into a series of points, each of which becomes fixed and mobile as we consider it; and similarly the sweep of melody can be broken into a series of tones (or of notes) each of which, if we stop to examine it, becomes a halting place and destroys the song." What does he mean? Something of the effect produced on the swimmers and others when Martha Raye yells "Hold it!" in one of her songs in "Hellzapoppin?"

And this from George Sampson, Inspector of the London Schools: "Teachers have gradually learnt that with teaching to read, the appetite must come from the eating; the mere teaching of the principles of mastication is of little good." But does not attention paid to principles of mastication in youth aid in warding off indigestion in later years?

Simmered down all this means that after a child has learned a tune he then is set about learning his notes—he acquires the "ability to see what he hears." I do not know that I agree with those who say what the "learner acquires is the ability to see what he hears." Is it not the other way around? Should he not hear what he sees? I do agree, however, with the method, in the beginning, of having the little songs taught by rote, followed by instruction as to the notes which represent the melody. I said that before, but I want to emphasize it. But seeing the notes has not taught the child to hear the sounds they represent; he has already heard them; what seeing them does is to make him hear them again. A child is familiar with the word "cat" and with the cat itself long before he ever sees the word "cat". Seeing the word recalls any experience he may have had with a cat.

There isn't anything new in this controversy and others similar. John Hawkins, writing before 1775, said: "It must be confessed that there seems to be a kind of retrogradation in a process which directs the admeasurement of a part by the whole, rather than of the whole by a part . . but notwithstanding this seeming irregularity the adherents of the former method are very numerous." And, continuing: "The principles on which these two very different methods of judging are founded became the subject of great contention: and might perhaps give rise to another question, as extensive in its latitude, as important in its consequences, namely, whether the understanding or the imagination be the ultimate judge of harmony and beauty; or, in other words, what are the peculiar offices of reason and sense in subjects common to them both."

There is a lack of agreement between authorities as to whether the voice or mechanical instruments may best be used as means of acquiring ability to read music. This lack of agreement may be accounted for through the special interests of each contender. Will Earhart, from whose book I quoted a moment ago, who is an instrumentalist, says:

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"The disparity between singing and playing is nowhere more clearly apparent than in connection with reading music from the staff. Here the advantage in favor of the players of most instruments is stupendous; and the advantage is great even to a player of such an instrument as the French horn. A degree of the staff, indeed, becomes for most instrumentalists equivalent to the location in space of a precise pitch; and it thus acts as a definite symbol that sets off a physical action that brings the proper pitch with a mechanistic certainty as reliable as that of a photo-electric cell."

(Well, if photo-electric cells are no more exact than some fiddle players I have heard I fear their infallibility might well be questioned.) To continue the quote:

"Any instrumental musician worthy the name does, indeed, conceive the tones represented by the notes before he hears them produced; but it is not absolutely essential to their production that he do so. It is possible for him, in reading new music, to strike a note—as we have all seen pianists do—look at it sharply (under the impression that he has blundered) and come to the conclusion that he was right, after all. But this means that he certainly did not conceive the tone aright before he played it; and thus to produce a tone correctly, after having conceived it wrongly or not at all, would be quite impossible to the vocalist."

On the other hand, Mursell and Glenn, from whom I have quoted also (p.206) say:

"The child who must approach the score through instrumental music of any kind is always at some disadvantage. In an ideal situation he would have already had some musical comprehension of the score before beginning instrumental work, both because it is a valuable tool, and because he needs the type of precise musical development which early work with the notation can afford. No instrumental means can equal the voice as a medium for apprehending the notation, because of the exigency of the mechanical problems, which are apt to absorb a great deal of the learner's attention to the detriment of everything else."

And there you are!

Then there are the advocates of the "Movable Do" vs. those of the "Fixed Do". That each method has merit goes without saying. Proponents of the use of the "Movable Do" point out its merits in the case of vocal music. Opponents point to the disadvantage of having anything come between the learner and the music. Charles H. Miller, of Rochester, makes something of a point in his contention that music progress will be handicapped so long as intervening ideas (i.e., singing syllables) are introduced between the music and the student.

One plea for the use of the "Fixed Do" is that it "facilitates

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transfer to the notation with its absolute indications." It would seem to be but common sense to use the one in the case of singing and the other in the case of playing. Of course, objection would immediately be raised over the difficulties involved in the use of two systems, and the objection would be valid. If provision could be made for properly graded groups, however, the objection should not hold. I cannot see much of validity in the argument that, in singing, the transfer from the neutral syllables to the words is serious; nor, in the case of the instrumentalist, to the notation. It is another mole-hill.

A highly desirable adaptation of the ability to read is that of its association with various types of musical projects. There is more to reading than its application to execution. As has been suggested, it may be associated with listening as well as with composition. And, in addition, it might well be used as a means of securing aesthetic enjoyment without either participation in playing or singing, in listening to others play or sing in person, or via various kinds of recordings including radio and sound-picture transmission, or composing; a phase of reading which, so far as I know, has received but slight consideration at the hands of writers on the subject.

The only reference I have found to such music reading as I have suggested I found in one of James L. Nursell's books (Principles of Music Education, Macmillan Co., 1937, p. 151):

"The musical score should at times be studied when it is not actually played or sung. This is for the purpose of teaching the pupil the skill of 'hearing with the eyes', which the best teachers advocate, and which is the true basis of good reading. In teaching the score to grade school classes, it is always good procedure to have them follow along the notes as the teacher sings. This is something far too much neglected in most studio teaching, where new compositions are thrown at pupils without any adequate preparation, with necessarily meager pedagogical outcomes. As a matter of fact, having pupils follow music from the score without trying to play or sing it is as valuable a technical drill as any of the ordinary exercises for developing musical dexterity. To repeat at the risk of tedium, it tends to make the score directly mean sound, and to train the pupil to catch from it musically significant units."

The common premise is that all music must either be played or sung. Well, does it? Is there not the possibility of the same pleasurable aesthetic experience when one merely reads a score that there is when he hears it either played or sung, often poorly? Simply stated, I mean just this: Why should not one be taught to read music in such a way that he might derive pleasure and benefit from reading it much as one derives such benefit and pleasure from reading a play? Shakespeare lovers derive great satisfaction from merely reading his plays; it apparently is not necessary for them to see and hear the actors, to view the stage with its properties and scenery. Why should not one be able to read an

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orchestral score without having to be interrupted every few minutes by "station announcement", or soap, or cigarettes, or by the grinding of an old, cracked record? I know it is an accomplishment that may be acquired; I know many people who can do it; I can do it myself, and I do do it. For me, reading a score is much more enjoyable than listening to the music played via radio transmission, for instance. At least, I can hear the oboe as it ought to sound and not as it sounds when relayed to me via the marvelous system of sound transference we now have.

Too highly specialized, it will be said. Possibly. But is it not equally specialization in the case of the Shakespeare addict?

Not at all practical, will be another objection. How do we know? Has it been sufficiently urged upon readers and lovers of music?

I suggested something of this not long ago to an excellent teacher, a teacher with ideas, one having what we used to call "the pedagogical instinct." She looked at me in amazement and said, first "Why, I never thought of it." Then, after having given it a moment's thought, went on to say that it couldn't be done; it was too difficult to teach ordinary reading to attempt any such thing; there would not be enough interest in doing it, and so on. Well, "ordinary reading" would be all that would be necessary, and I am not so sure about there not being enough interest in it. True, not every one likes to read plays, but that is no argument against suggesting that such a thing is possible. I know of two professional men in New York, one an editor, the other a corporation lawyer, who have the interest and would enjoy nothing more than doing something of the kind. But such a thing was never suggested to either of them until they were well along in middle life.

We don't go far enough in our teaching--at least, in the way of suggesting possibilities in our learning. We quit too soon. We don't do enough to stimulate the imagination. Where are the "Inspirational teachers" we used to hear about? Have we forgotten about hitching wagons to stars? We don't have wagons any more; possibly that's the reason. Maybe the rubber shortage may bring some of them back, and the change, of which this rubber shortage is but a phase, may bring back some other things along with the wagons.

I am going to "hedge" at once: I don't know just how I would go about it were I again to teach reading music. I haven't thought it through, but I believe I would begin experimenting with it very early in the process. I would try and have the pupil hear what he saw, instead of impressing him with the fact that he was seeing what he heard. The best job of teaching harmony that I ever saw done began when the teacher did away with the conventional harmony text-book and used a hymnal, selecting simple, well-known, four-part writing which was familiar. He had less difficulty in teaching intervals, triads, four-voiced chords in their various positions, fundamental and inverted, than he ever had while using the generally accepted methods and texts. And when he

passed those students on to the teachers of counterpoint and composition, the latter were pleased--than which no greater compliment may be paid a teacher of harmony.

Certainly I would not advocate doing away with or neglecting singing or playing; there is too much of value gained through the joy of participation with others or that of self-expression even to suggest it. No, I'm rather suggesting a means of augmenting the usual, common means of securing and achieving spiritual satisfactions through music.

It is taken for granted that the hearing of good music and its satisfactory performance is sufficient. Edward Dickinson, in his admirable Music and the Higher Education, Scribner's, 1915, in comparing the love of music with that of nature, says in part: "What many people call a love of nature is often hardly more than a sense of bodily comfort under pleasant atmospheric conditions. . ." He might well have continued the analogy by saying that to many people music is little more than a sense of bodily comfort--it makes one feel good; something of what Irvin Cobb had in mind when he spoke of that 'Little anticipatory thrill which runs up one's spine when one hears the kind of music that one likes.'

Goethe's rule of the intellectual life was to "live the whole". We cannot live in the whole of music if we read it merely to execute it ourselves or to listen to someone else do so. Our teaching of the reading of music seems to me to be only for a practical purpose--to enable us to sing or play the compositions of others, not to understand them. We quit much too soon; it is as if one would undertake the serious study of psychology and then stop with physiology. (That is not original but I do not know where I got it).

We do not see with our eyes but with our minds. We see what we are taught to see. Could we not hear what we might be taught to hear? Can the powers of the ear and eye be increased through practice? Of course, though not to the extent that the capacity of the lungs or the strength of a muscle may be augmented through exercise. But Lafcadio Hearn was nearly blind because his vision became impaired in childhood. Elizabeth Bisland, his biographer, says "From his books might be gathered a delightful anthology of the beauty of tint, of form, of shadow, of line. No loveliness was too subtle, too evanescent, too minute, to be recognized by those dim and straining eyes." Emerson tells us that Thoreau "had the eyes of a bird." The analogy between the senses of sound and sight is very close--the principles of one may be applied to the other. Thoreau said, "The contact of sound with a human ear where hearing is pure and unimpaired is coincident with an ecstasy."

Strange, is it not, that we have so much of the type of cacophonous singing we hear over the radio and in the sound pictures. Who is responsible for it? I have had only one person tell me that he enjoyed Bing Crosby's singing. It makes one with an ear for good music wonder if the anatomical structure of the ears of others is not quite different from

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his own. Nobility of taste shows itself in "a desire for moderation, simplicity, and refined gradation" in sound. This can be taught, although it will be difficult when children's ears are bombarded with the vicious noises from which there seems to be small chance of escape. All the more reason for encouraging a study of reading music which may admit of its quiet enjoyment. Thoreau must have had some such attainment in mind when he became conscious of making intellectual progress, and wrote:

I hearing get who had but ears;  
And sight, who had but eyes before.

Let me again quote Dickinson: "The final value of art to all of us is the personal value—the amount of life that it contains, heightening, enlarging, strengthening our own spiritual life." A page of music should mean something more than a device to use when one wants to play or sing; it should be something to which one should want to refer time after time in order that he might make it more a part of himself; that he might strengthen his spiritual life.

## THE EFFECT OF THE DEGREE OF HEARING UPON READING

Richard Madden, San Diego State College

In another paper I pointed out that one's concept of reading, or at least one's use of the term on a given occasion, may lie at varying points along a scale of meanings for the word "reading". This scale ranges from such a simple act as reading the alphabet to the very inclusive process of reading the signs of the times.

Consideration here will be given to the relationship of the acuity of hearing to the concept of reading which is rather widely held by good teachers of reading today; namely, that reading is a process of reacting thoughtfully to what the author has to say through printed symbols. Learning to read, according to these teachers involves learning the meanings of the author to which the symbols refer, and learning the significance of the arrangement of the symbols by such devices as paragraphs, sentences, clauses and phrases. This type of reading is supposedly measured by the better standardized tests of reading which are published today.

### Hearing and Reading Test Results

Studies of deaf children indicate that they are retarded in reading. They are also retarded on verbal tests of intelligence. The evidence is not clear relative to any retardation on performance scales.

The deaf are not totally deaf. Children in institutions for the deaf have some residual hearing, occasionally as much as 60%.

In the public schools there are children with all degrees of hearing loss from institutional borderline individuals to normal hearers. The estimated number of these children varies from three million to the more conservative estimate of a third of a million. The number varies according to the degree of hearing which is considered a loss of significance. The criterion of significance should be selected. There is no general agreement on it. Until there is, each study must be evaluated according to the degree used.

In one study conducted in New York City in which fifteen sensation units was the point of division between the hard of hearing and the normal, the hard of hearing were found to be equal in reading ability as measured by the Stanford Achievement test to a matched group of equivalent age, sex, race, IQ and parental occupational status.<sup>1</sup>

Within the hard-of-hearing group itself, the poorest third in

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<sup>1</sup> Madden, Richard. The School Status of the Hard of Hearing Child. Teachers College, 1931

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hearing achieved in reading as well as did the best third. It seems reasonably sound to conclude that reading, as measured by standardized tests of reading, is not affected seriously by a loss of hearing, until the loss is sufficiently great to deny the child the everyday experiences which come through hearing, even though hearing is achieved with greater than normal effort.

A breakdown of the Stanford-Binet test, however, did not reveal deficiency in the verbal items above. All one can now say is that no evidence has been found to indicate that the hard-of-hearing have a specific verbal deficiency as exists among the deaf. In both of the studies quoted, greater deficiency existed in the tests of arithmetic than in the tests of reading on Stanford Achievement. In both studies the hard of hearing were definitely poorer in reading than were normal hearers of the same age, when scores on intelligence tests were not held constant.

A similar study has been conducted by Waldman, Wade and Aretz.<sup>1</sup> They found but slight difference in reading scores when The National Intelligence Test IQs were held constant for the good hearers and poor hearers. The mean reading score was higher in Grades 4, 7 and 8 for the poor hearers and lower in Grades 5 and 6. In 47 of 63 cases of poor hearing the Stanford Achievement reading quotient was higher than the intelligence quotient.<sup>2</sup>

The statement is occasionally made that an intelligence test is a reading test and that the true difference between the hard of hearing and normal children is best represented without equating on the basis of intelligence tests. As an assumption this statement would be more tenable if the hard-of-hearing children were not also lower on Stanford-Binet non-verbal items.

#### Hearing and Beginning Reading

A second approach to the problem is found in an effort to determine the relationship between auditory loss and the method of teaching beginning reading. Bond tested the hearing of good and poor readers who had been equated for intelligence, age and years in school.<sup>3</sup> The poor readers who had been taught by a look-and-say method were but slightly lower than their control group in hearing acuity as measured by the 2-A audiometer, while those who were taught by a phonetic method were significantly lower than their control group. The study was made upon second and third grade children who were retarded "over one-half

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<sup>1</sup> Waldman, John L., Wade, Francis A. and Aretz, Carl W. Hearing and the school Child. Volta Bureau, 1931. P.139-41.

<sup>2</sup> Ibid., Appendix D

<sup>3</sup> Bond, Guy L. The Auditory and Speech Characteristics of Poor Readers. T. C. Contributions, No. 657, 1935

## Madden 3

year in the second grade and a full year in the third grade."

From the three studies quoted above the following hypotheses may be drawn.

1. Reading achievement as measured by standardized tests is adversely affected when children with a 15% loss of hearing are taught early grade reading by a phonetic approach.
2. When early grade reading is taught by a look-and-say approach the reading of hard-of-hearing children is equal in quality to that of normal hearers who have comparable scores on the Stanford-Binet test of intelligence.
3. If a 15% loss of hearing affects reading adversely, it also affects the test scores on Stanford-Binet and the National Intelligence Test to an equal degree.

#### Hearing of Clinical Cases

A third type of analysis is to study reports of hearing loss as a cause of reading deficiency in cases brought to reading clinics. Poor hearing is not often listed as a major cause of special reading disability. Reports from clinics which have the facilities of an excellent audiometer do not indicate high incidence of poor hearing as a cause of reading loss.

#### Hearing and Reading Readiness

A fourth approach is made to the problem through reading readiness studies. The results of these studies may be typically summarized by this quotation:

"Varying abilities to see, hear, and speak....do not seem to be closely or critically related to progress in reading, as revealed by either the statistical analysis or the case studies."<sup>1</sup>

Gates, Bond and Russell arrived at a differentiation of this general conclusion as follows:

"Our interpretation is that in the large group lessons in the public schools, children with poor hearing are often clearly handicapped, whereas in the more intimate small group work in the private school

<sup>1</sup> Wilson, Frank T., Flemming, Cecile White, Burke, Agnes, and Garrison, Charlotte G. "Reading Progress in Kindergarten and Primary Grades". Elementary School Journal, 38: 442-449, Feb., 1938.

they are rarely unable to hear what is being said. In large and noisy classes it is important to test auditory acuity and to give the hard-of-hearing children the most advantageous positions in the classrooms, as well as special help."<sup>1</sup> This would seem to be a sound conclusion.

#### Implications for Teachers

As one reviews the research he sees implied some relationship between the method of teaching and hearing. The relationship between deficient hearing and reading is not of great social significance. The individual child, however, who has impaired hearing and who is placed unfortunately in a large, noisy classroom where the method of teaching tends toward aural stimulation may become handicapped in learning to read effectively.

The teacher, on the other hand, who discovers the loss of hearing, by keen observation or preferably by periodic audiometric testing, can remove the handicap by adapting the method of instruction to the sensory efficiency of the child and by proper placement of the child in the room. Proper medical aid is always imperative.

In cases where the loss of hearing is great, the teacher will find much encouragement in the experiment reported by McDade in which children with normal hearing, and deaf children too, learned to read by a purely non-oral method in which the children were neither "... required or permitted to speak a word of a sentence in print before them; nor did the teacher speak it for them."<sup>2</sup> The results were considerably better than the average for the Chicago school system, in which the experiment was conducted.

A previous experiment by Thompson and Gates with deaf children also indicates that once a serious loss of hearing is discovered, an adapted method of teaching reading will produce proficient reading ability.<sup>3</sup>

#### Concluding Statements

The foregoing conclusions are based upon results of standardized tests of reading which conceive reading as making responses to printed questions or directions concerning printed words, primarily a function of the cortex, to which the sensory organs are ancillary. The limitations are obvious.

Further research must be done before conclusions can be drawn

1 Gates, A. I., Bond, G. L., and Russell, D.H. Methods of Determining Reading Readiness. Teachers College, 1939. P.20

2 McDade, James E., Beginning Reading by a Non-Oral Method. Seventeenth Yearbook, Department of Elementary School Principals, N.E.A. Vol.17, No. 7. P. 305-312.

3 Gates, A.I. The Improvement of Reading, Revised, 1935. Macmillan, P.410 ff.

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relative to interests in reading, reading in special fields, and other varieties of reading not encompassed by the tests used. Most imperative of all is the need of ascertaining whether or not the decreased scores on Stanford-Binet are in part due to deficiency in hearing. There is ample evidence that barren intellectual environments are contributory to decreased Stanford-Binet IQs. Deafness makes one's environment sufficiently barren. But no one seems to know where the border zone on the scale of hearing loss lies. The demarcation zone seems to be a function of teaching method, home consideration, and the availability of compensatory sensory stimuli, especially visual stimuli.

In the meantime let us find every child in every classroom who has a loss of hearing and make whatever instructional or other environmental adjustments that are necessary; at the same time we should refrain from charging to loss of hearing an unwarranted number of cases of deficient reading, for the evidence indicates that the percentage is quite small.

## MATERIALS FOR DEVELOPING READING

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I have been asked to speak upon the subject "Materials for Developmental Reading." The topic has been stated for me by someone else. At first it seemed to me to be a subject which has been treated very adequately by many people. Perhaps it has, but as one's mind begins to play upon it, fascination in it develops. I want to explore it with you for a few minutes. We will begin at the end; "Materials for Developmental Reading."

### I. Defining and Delimiting the Topic

What is reading? It is a word which means different things to different people. The word "read" originated from the middle English reden or raedan and the Anglo-Saxon raedan, which meant to read, advise, counsel, or guess. It would seem to bear some relationship to the Dutch raden, meaning to advise, and the German raten and possibly the Old Slavic raditi, to take thought for. In Sanskrit radh means to succeed.

It is not difficult to ascertain that the origin of the word indicates an internal change within the reader rather than an overt act performed by the reader. When one was reading he was changing rather than performing. If one accepts the original meaning of reading as referring to a process of advising, counseling or taking thought for, he finds it interesting to analyze the differentiations of the term which have been developed and to note the shifts in meaning which are given to it today.

The first which I shall mention is that reading is the apprehension of the meaning of printed words. Richards would call this a part-whole shift. The whole concept involved the apprehending of the counsel or advice of another person. A part of that whole concept is that the words used by that person retain as fixed permanently the meaning which he gave to them. This leads to the idea that words say things. The qualities which the author gave to words are ascribed to the words themselves.

A shift still more troublesome than the one just described, that printed words possess meaning, is that printed words give meaning. This leads to a naive practice of stirring up words orally and then trusting that they will do the rest while the reader does nothing but the

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<sup>1</sup> I. A. Richards. Part-Whole Shifts and Content Changes. Educational Method, 21: 278-282. March, 1942

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mechanical stirring. Certainly there are many people today who believe that good oral reading and good reading are synonymous.

Another interesting shift is exemplified in the expressions, "he reads the barometer," "to read the signs of the times," and "to read the sorrow on one's face." These are situations in which the cues for thinking come from objects or situations rather than from another's thoughts as expressed by words. A person may perceive the signs of the times but not be able to conceive the meaning. In this usage the meaning of reading has shifted to perceiving or to interpreting objects and less verbal situations.

Another part-whole relationship worthy of note is that reading is a school subject, like geography, history or science, as if it had a content of its own and as if the content were the important part. The proper evaluation of this turn of the concept of reading is very important for the consideration of my topic. If the material of reading has ends other than the promotion of the quality of the operation of the act of reading, those ends must be defined and material selected for the achievement of them. Whether reading is a verb or a noun is highly important.

It becomes apparent that the term reading is a referent applied to many very different activities which range in complexity from such simple performances as reading the alphabet, reading numbers, reading notes in music, and word-calling to such complex activities as reading the signs of the times, giving thought to the words of another person, or placing constructions upon the written thought of an author. Some degree of differentiation seems necessary in order to avoid confusion with such terms as perceiving, listening, apprehending, interpreting, and thinking.

But that is not all the trouble. Consider the word "developmental." Something, apparently, is to be developed. Is it the reading or is it the reader? If it is the person which is to be developed, shall we consider developing his power to read, his knowledge through reading, or his pleasure gained by reading?

To confound the topic further, "materials" is plural. If reading means "taking thought for" and developmental reading means "developing the power to take thought for," then "materials" may mean anything from vitamins to contemplations within the cortex. One material in any reading situation which is highly desirable is at least a modicum of IQ.

It becomes obvious that the term "reading" means many different things. A position for use in this paper must be chosen arbitrarily upon a scale of many meanings. The operational concept which will be used in the paper is that reading is the on-going activity of a person who is engaged chiefly by the stimulation of another person through the writing of that person. All reading is developmental if the activity

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leads to further activity, either good or bad. Materials are limited in this paper to printed or written materials, which means, in the main, symbolic representations. I am not proposing this as a definition of reading nor am I defending it as the best delimitation of a very unwieldy word. Since something must be done to arrive at an operational point of departure, I have chosen the concept held by most teachers and supported by the dictionary of the American Psychological Association. At the same time, I must hasten to add, that I agree with Dr. Spencer that such a narrow delimitation from the broad scope of the meaning of reading often becomes a person's whole concept of reading, and when it does, it is a bondage out of which comes but little effective developmental reading.

II. Materials Must Be Chosen to Meet Purposes

The selection of materials for reading is encompassed by the selection of the curriculum. The purposes for which children would read throughout the world, if left to themselves, are situation-centered. The common denominator of child-likeness is much the same the world over. But when adults shape children's reading for chosen ends, reading becomes a purposeful instrument which varies from nation to nation and from time to time. Communism, fascism and democracy are often the ends-in-view in children's readers. Other books are frequently eliminated by censorship as sources of competitive ideas.

The extensive use of many books rather than the intensive use of a few text-books serves the purpose of developing free inquiry. This practice promotes democracy and finds favor at the present time in America.

The one who selects children's books holds in mind similarly, either wittingly or unwittingly, many other purposes. An excellent and timely example is our present effort to "air-condition" the children of America. It is a very worthy goal upon which our national existence may depend, although the children are already far ahead of the adults in this respect. I shall mention several others later. Let us keep in mind that we are concerned with the intermediate grades, nine to twelve year old children.

This is a period when horizons are broadened. Events, objects, people or places of long ago or far away are very acceptable. The community school must not be too narrowly conceived. The child has reached sufficient maturity and has had adequate first hand experience to place proper constructions upon what authors have to say about places farther away.

Differentiation between the real and the unreal comes more easily at this age. Mythology develops judgment of the true and the untrue.

This increased power of discrimination permits less control over the reading program by adults. When the child is able to cope with

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metaphor greater freedom is possible. At approximately the same time, he is able to differentiate between denotations and connotations. The fourth and fifth grades are rather critical in these respects. The teacher should be concerned greatly with word-study. It is a period when many meanings are being fixed. The child has emerged from a more laborious period of reading and extends his scope rapidly.

Because of this increased ability more geography, history and science are read. Materials in these areas must be general and elemental. Subject-matter divisions, and especially subject-matter areas, are of doubtful validity.

The reading textbook as a source of material is very limited in use. It would seem to be justifiable only so long as the pupils (1) need a controlled vocabulary, (2) need common material for practice exercises, or (3) have a shortage of other suitable materials.

The teacher who has as a purpose the teaching of the component parts of the reading process may select material accordingly. Materials vary in adaptability to teaching of outlining, finding the central idea, headlining, summarizing, selecting and rejecting for the purpose in view.

Books of practice exercises are suitable in classrooms where these component parts need to be isolated to be seen clearly. These exercises are done more effectively when taken directly from more vital reading material. But I would not deny them to the busy teacher who uses them wisely as means and integrates them effectively in a broad program of reading.

The question of the classics usually arises. If a book is classical because children like it, use it. If it is classical because librarians and teachers, rather than children, like it, omit it. There is a sound reason for this. Children do not yet understand the connotations, inferences, metaphor and possibly humor which the adult interprets from a much broader background which he brings to the book. Growth is continuous, but steps of progress must be taken easily. To force too difficult material upon children is dangerous.

When the purpose is to read for facts different material may be needed than for reading for development of understanding. I have recently compared two children's encyclopaedias. The chief difference to me was that one led the child to learn facts and the other was conducive to basic understandings. My purpose in this instance was to increase understanding, so I chose the one which did that.

A very popular purpose in teaching reading at the present time is the development of critical thinking. This is a cyclic swing toward the development of power vs. the development of knowledge. It is a sound objective and probably needs the periodic stress which is now given it. Its effect upon material is less than its effect upon method. It may cause more concentrated study on less material. We have gone

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through a period of emphasis upon extensive rather than intensive reading. "How to Read A Book" has been a best seller. Now I. A. Richards has written a book entitled, "How to Read a Page". I wonder if we shall soon have something on how to read a word.

The older teachers who used the dissection method of teaching literature were very interested in semantics. Recent thought in the field, however, has given us a more intelligent approach. A scientific attack upon language should produce implications in regard to material. I shall venture the following predictions.

More attention will be given to the quality of writing. How an author uses words will be as important as which words he uses. Word counting will share its popularity with context analyzing. The manner of using the connotations of a word will be important. The facts concerning the semantic variations of about five million running words, as studied by Lorge and his associates, will rank in importance with Thorndike's word lists and researches on children's usage of words.

There will be an emphasis upon the intrinsic value of material to produce critical thinking. The use of context to teach word recognition intrinsically has long been practiced. Authors who know child thought will write material in a manner which will improve children's thinking.

The material and form of standardized tests will be changed greatly. The tests of Wrightstone and Roma Gans indicate the trend. Tests affect the choice of material.

There are many other implications.

### III. Materials Must Be Chosen to Meet Psychological Criteria

The first principle, "Interest begets learning," is very generally accepted. There is some difficulty in its application, however. The most troublesome task seems to be to find materials for the retarded reader which are sufficiently advanced in interest level and sufficiently easy in word recognition. The practice of re-writing classics in simpler vocabularies, or in Basic English, is a good one, provided the product does not become the literary fare for all children. Here again our guide must be the principle of pacing, easy enough to hold interest, but difficult enough to stimulate growth.

Witty and Kopel, in Chapter II of "Reading and the Educative Process," have contributed a fine discussion of the relationship between interest and reading. Boys are interested most in adventure, mystery and detective stories. Girls preferred them, too, after reaching the fifth grade. Next in order, the boys mentioned stories (unclassified), history, travel and science. Girls mentioned rather frequently travel, plays, poetry, and history. Books on music, art and biography were seldom mentioned. The comic books and comic strips are much more

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popular. The irrepressible conflict over the comics between the children and their elders is being won by the children. I would compromise cheerfully by approving "True Comics" and "Calling All Girls" for any boy or girl. There is a great national need for a comic strip of high grade humor, free from vulgarity. Its effect upon the development of an individual's sense of humor might be considerable. We no longer have a widely read, high quality humor magazine. The radio is partially meeting the demand for humor.

The magazine liked most by girls is "Child Life" and the boys prefer "Popular Mechanics" in Grade five and "Boy's Life" later.

I doubt if the science interest has been given a proper chance for expression by boys in studies of their interests. I predict that aviation would now stand at the head of all boys' lists, provided it were the vehicle of its share of adventure and mystery.

A second principle of learning which affects reading is this, "the repetition of a goal-activity affords an opportunity for learning to progress." The principle of the simple repetition of an event has been employed by authors of primary grade readers. The number of words and the times which each is used have been emphasized as highly important. In the upper grades the value of extensive reading as a vocabulary builder is recognized. But I should like to stress the repetition of the goal-activity. Repetition of experiencing the meaning of a word is less important than repeating the desire to know the meaning of a word and the satisfaction of the desire. The first is often static; the latter is usually dynamic.

This principle applied in the upper grades calls for unit teaching or some comparable form of strong motivation. An abundance of material on each of several centers of interest is needed to meet the demands of goal activities. In purchasing new books, schools might profitably use the units of work in their respective curricula as selective criteria.

Another principle which has much bearing on material is this one: "Subject-matter becomes a reasonable objective in education only after differentiation has been carried a good way..."<sup>1</sup> Ordinarily children in the intermediate grades have not progressed far enough in their analysis of natural phenomena, events, or social relationships to justify concentrated reading in a subject-matter field without very frequent periods of integration. Seldom in research studies of interests have children voted for special subject-matter books. It has happened in science, but that is still quite general. The place for subject-matter books would seem to be as references to which children may turn in their goal activity. This does not mean no histories, no geographies or no science readers. But it does mean that the use of these should contribute to broader integrations, such as appreciation of one's nation, or

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<sup>1</sup> Commins, W. D. *Principles of Educational Psychology*. Ronald, 1937,  
p. 334-335.

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knowing a state or community, or keeping well. The time comes in high school and college when subject-matter mastery should be a specific goal.

The facts and generalizations centering around what is generally known as transfer of training have had altogether too little influence in recent years upon the textbooks of children. The statements made above in regard to critical thinking are pertinent here. McCallister<sup>1</sup> reports an analysis of twenty high school textbooks in the natural sciences. The predominant emphasis in each subdivision in one hundred pages in each book was determined. Assimilation and retention of information was emphasized in 68.2 percent, of the subdivisions, apprehension of relationships in 13.0 percent, development of concepts in 13.0 percent, and solution of questions or problems in 5.8 percent. The development of concepts varied in amount in the books from 41.0 percent to 3.8 percent. A cursory analysis of elementary school science books leads me to believe that they vary as much, or more.

Our present concept of transfer is such that word counts in science books constitute a very important but a very small portion of the total analysis which should be made before selecting a series for use. If we ignore the fundamentals of transfer in selection of materials, reading patterns of children may arrest at a very low developmental level. Once these patterns become crystallized they are difficult to change.

Lack of time prohibits the development of other psychological criteria. I should like to close by emphasizing the importance of a very broad understanding of reading materials, children and the learning process for the wise selection of the materials of reading. I have made no attempt to recommend specific materials. Those of you who desire that should read Appendix D in "Reading and the Educative Process" by Witty and Kopel. I have attempted to touch upon some of the fundamental considerations which I believe to be necessary for the intelligent selection, wise use, and proper individualization of printed materials of reading.

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<sup>1</sup> Judd, C. H. Education as Cultivation of the Higher Mental Processes. Macmillan, 1936. Chapter VI, by J. W. McCallister.

## ANISEIKONIA AND VISUAL EFFICIENCY

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Reading is a subject of interest to a diversity of professional workers. Inquiry into the nature of reading processes has enlisted the efforts of educators, psychologists, specialists in seeing, neurologists, and many others. How to prevent and correct reading difficulties, is of course, of great concern to both educators and parents. Since educators are becoming increasingly sensitive to the "whole child" approach to the study of their problem, they are making systematic canvasses of pertinent contributions in allied fields.

The eyes of the children have for many years been given a first ranking consideration in any case of reading disability. The effect of corrective lenses, visual training, exercises, and many other forms of eye therapy upon reading has been very thoroughly investigated, but in almost all cases the correlation factor of correction of eye sight to an increase in reading speed, and comprehension is very low.

This is actually what should be expected. Due to the complexity of the reading process, an almost inexhaustible list of contributory causes can be found. The more common ones are: Low general intelligence, poor motivation, low visual defects, auditory defects, word blindness, personality disorders, impaired general health, reversal tendencies, ocular and manual dominance, symbolia, and bilingualism. Studies of such factors occur regularly. Dr. Gray finds about 100 papers written in the field annually, and he has made summaries of reading disability causes up to and including 1,925 that fill a book--and not so small a book at that. Notwithstanding, educators still remain vitally interested in eyes. All teachers and psychologists can remember vividly the change made in some person by glasses or visual training. Changes ranging from mere increase in reading speeds to complete readaptations of personalities and the rounding up of a well-balanced life rescued from the beginning of neurotic tendencies.

Specialists in visual correction or, more exactly, visual efficiency, such as myself, have more than a passing interest in the reading problem. Our interest comes from the visual inefficient phase. A child with perfect vision, perfect eye coordination, and perfect muscle balance, is less likely to have a reading difficulty than another child with those difficulties. Literally, visual efficiency could be made to cover the entire field of vision, from actual seeing. However, it is usually limited to the interpretation but not the reaction to the interpretation. In other words, we specialists in visual efficiency are interested in whether or not the child can see comfortably, easily, and clearly. We are not quite so interested in how much of what he sees he can understand. That is your problem.

Teaching the child to study efficiently is your job. Actually,

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from that arises your interest in reading problems. Certainly, there is no one better equipped to handle it than the teacher who is constantly with the child.

To be binocularly efficient a number of conditions must be met. First, there should be no refractive errors. This is more easily understood if the eye is likened to a photographic camera. The optical system, the cornea, and the crystalline lens form a real image on the retina or light sensitive film at the back of the eye. Not only must each eye form a perfect image in its own right, but it also must be balanced, each image being identical to the other in size and shape.

Second, the act of reading varies. Reading at a distance cannot be compared visually to reading at near. This change calls into play twelve external muscles and two internal muscles. The twelve external muscles, six for each eye, converge the eyes toward the nose. This action keeps the image centered upon the sensitive portion of the eye, the fovea. The internal muscles increase the total power of the eye, the accommodative mechanism, focusing the image at the plane of the retina. Again these actions must be equal and balanced between the two eyes. In reading, convergence and accommodation must be maintained while the eyes are moving laterally across the page.

Third, the images falling upon the retina must be transformed from the physical energy of light over to the physiological energy of nervous impulse and transmitted along the optic nerves to the interpretive centers. These lie to either side of calcarine fissure at the hindmost section of the brain. At this point the final act of vision is performed. The nervous impulses are there interpreted and a mental impression is projected out into space.

In general, a defect in any part of the visual apparatus will interfere to a greater or lesser extent with vision, depending upon the location and magnitude of the defect, and on the capacity of the nervous system to compensate for it.

There may be defects in the light transmitting or light sensitive parts of the eye such as: Opacities (clouding), irregularities, inflammation, hemorrhages, or degenerations. Such defects are either present at birth, or they may result from severe general disease, such as tuberculosis, diabetes, kidney effects, the childhood diseases, or from a disease localized in the eye such as trachoma, glaucoma, etc. An injury of the eye or head may also produce visual abnormalities. As a rule they are not entirely correctable, and the individual may be handicapped for life.

Refractive errors may be divided into myopia (near-sightedness), hypermetropia (far-sightedness), and astigmatism (differences in the curvature of the eye so that the focus is not clear in all meridians at the same time). Astigmatism is usually found in combination with either hypermetropia or myopia.

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When a considerable error of refraction exists, the images of the objects looked at are not brought to a sharp focus on the light sensitive retina. It is obvious that, if these images are much blurred or distorted, visual forms such as letters or words cannot be clearly distinguished. A child will either fail to recognize them or will incorrectly interpret them when attempting to read.

When these refractive errors are fully and accurately corrected by means of properly fitted glasses, clear vision is obtained. If the defects are under or over corrected, then the blurred or distorted images on the retina may cause nervous excitation of the focusing apparatus of the eyes (accommodation). In an attempt to make the image clear and distinct, persistent stimulation of the focusing mechanism frequently results in discomfort of the eyes, sometimes inducing periodic or permanent ciliary cramp and a whole train of symptoms ocular and general, physical and mental.

Within the last few years another type of binocular defect has been receiving a great deal of attention. The name for it was coined by Dr. Walter B. Lancaster, chief of staff of the Dartmouth Eye Institute. Patterned after the Greek, it is called aniseikonia (an-not, iso-equal, ikon-image). Aniseikonia is simply that condition in which the ocular images are unequal in size and/or shape. The term, ocular image, is used to describe the impression which reaches consciousness through the vision of one eye. It is determined not only by the properties of the image formed by the eye, but also by the modifications imposed upon that image by the anatomical properties and physiological processes by which this image is carried to the higher brain centers. To have aniseikonia is like having a magnifying telescope in front of one eye and nothing in front of the other, yet trying to coordinate the two eyes for single, simultaneous, binocular vision.

Aniseikonia is of necessity a binocular condition. It is due solely to a difference between the two eyes. Thus closing one eye completely eliminates the comparison and effectively eliminates the aniseikonia.

The history of aniseikonia dates back about two hundred years. Donders, an early investigator of the eyes, pointed out that as they move across a page in the act of reading the distance between each eye and page is continually changing with the result that the retinal images are constantly changing size. Only when looking at the center of a page straight before us are the eyes equi-distant and the images precisely alike. Donders felt this was rather important, but he could get none of his contemporaries to agree; and in the furor, the idea was dropped. From then to now various men have toyed with the idea, but none came to any definite conclusions.

In 1919 Adelbert Ames, Jr. came to Dartmouth College. He was a man of all trades. His formal training was that of law. He was a graduate of the Harvard Law School. Legalities had held his interest only during

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school. Immediately upon graduation he began to paint. This lead him to a study of colors and attempted reproduction of scenes by the use of their basic colors. Finding something lacking, he turned to a study of the eye. Eventually, he was led to designing a camera which would reproduce the optical errors of the eye. It was at this point that he came to Dartmouth. He was joined in this work by Dr. Gordon Glidden.

Between the two of them, they finally devised such a schematic eye. In the process, new eye defects were discovered. As these were investigated and explained, new phenomenon were found. At this point the Dartmouth Eye Institute was formed. Finally in 1928 the successful isolation of an anomaly called aniseikonia was announced.

Thus, after a lapse of two hundred years, inequalities of eye images were rediscovered. There was an important difference this time. The condition was not suggested merely as a theoretic probability, but was isolated, measured, explained, and corrected.

Since 1928 the work has been going on at an accelerated pace. Many new men have been added to the staff, each an expert in his own right. Today the staff consists of men specially trained in physics, mathematics, physiology, psychology, and medical knowledge. Their efforts crystallized into concrete achievement by a special type of knowledge known as common sense possessed in marked degree by the director of experimental investigation, Adelbert Ames, Jr.

Basically, aniseikonia is termed a sensory defect. Actually all eye defects, other than pathological, could be termed sensory. In any eye examination, the vision is investigated in part by psychological methods. The examiner introduces changes in the optical factor of vision, and observes the changes in the psychological field of vision reported by the patient.

It is true that in refractive errors, certain objective techniques are used to approximate the error of the eye. Similarly in squints, deviation of the eyes, the number of degrees of the squint can be measured. Usually, however, each technique must be checked for complete accuracy by a subjective questioning of the patient--"Which is better, this lens or the way it is now", or "Tell me when one image is directly above the other." I assume that every person has had his eyes examined or watched some other person undergoing the process.

In aniseikonia, we are entirely dependent upon the judgements of the patient. Aniseikonia cannot then be localized to the individual eye itself, as can the refractive and accommodative defects. The cause can only be surmised by theories. This is much like the reading problem. To trace the possible causes of aniseikonia, we shall take the light as it starts for the eye and follow it until it finally results in a visual sensation.

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First and foremost in the list of causes of aniseikonia is that of uncorrected optical errors, particularly those arising from astigmatism. Those of you who wear glasses may remember some of the effects of your first pair. The room was slightly crooked, the street running uphill or downhill, and your faulty judgment of distance faulty. Everyone of those symptoms can also be due to aniseikonia.

It is well-known among physicists that the magnification property of lenses depends upon the curves of the two surfaces, the thickness of the lens, and the distance from the eye. Thus if a pair of eyes requiring lens correction are isekonic, i.e., have equal images before correction, the application of the required correction may induce size differences, in other words the correction of the refractive error has created another, namely aniseikonia.

However, in many of the cases measured at Dartmouth, eyes without the correcting glasses would measure a certain percentage of size differences (aniseikonia). When the proper correction was placed before the eyes, the measurable aniseikonia would be gone. In fact, this is more often true than false.

From these facts it might be said that eye errors cause the aniseikonia, but like the reading problem, only a slight correlation can be obtained. Sometimes the probable size difference found by calculation will be exactly opposite to that found by measurement. In fact, some people with no error of refraction at all will have a great deal of size difference. Quite obviously the optical phase of vision is not the sole cause of aniseikonia.

To resume, we now have the light in the eye, after passing through the optical system formed by glasses the cornea and the crystalline lens it comes to a focus on the back portion or retina of the eye. Here is located another potential difference between the two eyes.

The retina consists of many layers. The next to the last and important one contains the rods and cones. These are the cells which change the light impulse to nervous impulse. Each cone has its own nerve that leads to the brain. If there were an unequal spacing of these cones as between the two eyes, then unequal nerve impulses would arise. The brain then would have a faulty pattern to interpret--aniseikonia would result.

You will notice we have left out distortions caused by opacity or disease. These are usually uncorrectable. One phase of pathology is important in aniseikonia. There are some diseases, such as tumors and cancers, that cause the retina to bulge forward in one eye. The rods and cones then intercept the image sooner in that eye than in the other. Obviously, this makes the image of that eye smaller than the other.

Progressing farther into the physiological phase of vision, the nervous impulses move over the two optic nerves to the brain. Again,

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any physical irregularity of these two channels or irregularities of transmission due to disease, could vary the strength or final pattern of the nerve impulse. Any variance of nerve impulse could easily cause a misinterpretation by the brain and result in measurable aniseikonia.

The latest work upon the mechanism of interpretation has brought out the following facts. The two nerve impulses are spread along an area of the calcarine fissure, one on each side. Each has its definite place. The impulses arriving there are spread out much as a television set projects a picture. A series of flashes faster than the reaction time of the eye occur so that a continuous picture is formed. Also the impulses from the central portion of the eyes continually replace one another. This leads to a constant interchange and comparison of images. The slightest flaw at this point again could lead to unequal judgments, faulty projection of the mental images, and an apparent size difference between the two eyes.

This is indeed an imposing list of possibilities. Almost any act of vision could cause a size difference between the two eyes. Because of this, size differences, independent of their origin, are spoken of as aniseikonia. Like reading disability, it is referred to by the general term rather than by a description of the specific cause or causes.

As aniseikonia can be diagnosed only in terms of subjective symptoms, there being no possible way to measure it objectively, we are entirely dependent upon the effects and judgment of the patient. There is perhaps no phase of eye work more fascinating and unusual than a study of the effects produced by size difference.

The subjective symptoms or effects, can be broken down into two phases. Some symptoms can only be elicited by means of special apparatus. They might be called spatial distortions. On the other hand, we have the discomforts suffered by the patient, more generally called subjective symptoms. It is difficult to segregate and determine the discomfort symptoms of aniseikonia from those of other visual anomalies. One important difference is found in aniseikonia. The better and more accurate the refraction, the more exact the correction found by the usual methods of examination, the worse the aniseikonic symptoms become.

Quite an imposing list of discomfort symptoms can be made. Headaches by far lead the field. Headaches caused by image size difference range greatly in severity, from the simple strain which is easily eliminated by one or two aspirins, to the worst type of migraine sufferable. It is in the elimination of these terrific migraines that correction of aniseikonia is doing the most good.

In the past this type of headache has been judged incurable. General practitioners, after trying everything to no avail, could simply

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throw up their hands and say, "Migraine! It will get better as you grow older." Now we have one more possible solution to this scourge of man and womankind.

One factor of migraine is also a symptom in its own right; upon near work these headaches become worse, growing from just a slight discomfort, to such strength that near work must be stopped.

Associated with headaches and near point disability; intolerance of light, nausea in trains or automobiles, and faulty judgment of distance is usually found. These five symptoms are found in sixty per cent of those suffering from size difference.

These symptoms are not in themselves positive evidence of size difference, just as all headaches do not come from the eyes. They are merely links in the chain of evidence that, combined with other tests could lead to a diagnosis of aniseikonia; especially if everything else has been tried and proven unsuccessful in providing comfort for the patient.

Other symptoms, but not as common as the first five, are headed by squints. As explained before, squints in our language, are deviations of the eyes. Cross eyes, wall eyes, or eyes pointing up or down may be caused by aniseikonia. Some squint patients have been found with as high as twenty-five per cent size difference between the two eyes. Such a condition would be equivalent to trying to use the two eyes together while using a telescope over only one eye.

Watery eyes, red eyes, tilted heads, aching necks, closing of one eye, holding books too close, dislike of motion pictures, holding books to one side, poor judgment of distance, inability to coordinate hand and eye, blepharitis (inflammation of the eyelids), feeling of sand in the eye, itching of the lids, and practically any other symptoms imaginable can be found associated with this eye condition.

The faulty judgment of depth or imperfect space projection, mentioned as one of the five major symptoms, deserves special consideration. It is by use of this factor that part of the diagnosis and measurement of aniseikonia is possible. Two masterpieces of instrumentation have been made to demonstrate this--the leaf room and the tilting table.

The leaf room is a cube about nine feet in all dimensions and open in the front. Its walls are covered with oak leaves, top, sides, bottom and back. A person suspected of aniseikonia is placed in front of the room, centered between the two walls. As he looks in the room, if he has aniseikonia, a truly amazing thing happens. First, he appears shifted towards one of the side walls. The direction depends upon the type of error, and the amount upon the degree of the aniseikonia. The wall to which he seems close appears small, the leaves smaller and pressed flat against the wall. The wall from which he seems further appears larger, the leaves larger and standing away from the walls very

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distinctly. The roof and the floor slant, respectively, up and down from wall that is smaller to the larger one. The back appears to have been rotated around a vertical axis, and slants away from the observer as it approaches the larger wall, appearing in shape like a triangle with the tip cut off.

The tilting table is a flat board of irregular shape studded with balls of different sizes and spaced irregularly. The person is seated in front of the table looking down at a 45 degree angle. In front of the right eye is a square with its edges horizontal and vertical. In front of the left eye the square is rotated so the sides are at 45 degree and 135 degree angles. The table is mounted upon a central pivot, its movement made by two wheels that allow any adjustment of slant in any direction. He is instructed to adjust the two wheels until the table appears level. If any aniseikonia is present instead of being leveled, the table will be placed slantingly, the amount and direction again depending upon the degree of size difference between the two eyes.

Before discussing the significance of these changes upon space perception, it might be well to explain the types of classifications of aniseikonia. As I said before, aniseikonia is a result and not a cause. It emphatically does not mean the dioptric image formed in the eye, but rather the cumulative, resultant images received by the visual centers of the brain.

However, as with all other eye defects, it is classified in terms of the lens that corrects it. This may be more readily understood if aniseikonia is compared to farsightedness. We speak of a farsighted person as a plus one hypermetrope. Actually, the plus one represents not an excess but a deficiency in power of the lens system of the eye, the plus one alluding to the lens that, when added to the imperfect lens system, makes the eye theoretically perfect.

Aniseikonia corrections are referred to in percentages, meaning, that per cent magnification needed by the image of one eye to make it equal in size and shape to the image in the other eye.

Aniseikonia can be broken down into regular and irregular. Irregular aniseikonia is usually caused by a malformation or injury to the eye, the crystalline lens being either displaced, tilted, or the surface made irregular. This is uncorrectable by lenses. Regular aniseikonia is corrected by lenses. There are three general types--overall, meridional, and that caused by prisms. Overall size difference means and implies that the image of one eye must be magnified equally in all directions to make it identical in size and shape to the image formed by the other eye.

"Meridional" size differences designates those images which are deficient only in one meridian, the other meridians being equal to those in the other eye. You will recognize the similarity to cylindrical corrections of astigmatism. Plus one axis ninety referring to

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power in the horizontal meridian, then gradually diminishing until in the vertical meridian no power is left.

Also it is easily possible and usually found that meridional and overall aniseikonia will go hand in hand with each other. Just as hypermetropia or myopia may be combined with astigmatism.

The third type of regular aniseikonia is rarely troublesome. It is formed by prisms worn in front of the eye to correct muscular imbalances. Its effect in the leaf room is slight. One has the sensation that the back wall either bows in or out depending upon the type and direction of the base of the prism. It has no effect upon the tilting table.

In the correction of aniseikonia, the leaf room and tilting table are important only as diagnostic instruments. Each of the meridional errors whether axis one-hundred and eighty or axis ninety has a different effect. However, overall size differences have similar effects, making it impossible to tell what the error is in amount or type. An axis one-hundred and eighty meridian size difference of the right eye has the same effect as the same defect at axis ninety over the left eye. This effect, called the induced effect, is shown when using the tilting table.

The effects of meridional aniseikonia for axis one-hundred and eighty of first the right then the left eye on the leaf room are:

A. If the horizontal meridian of the ocular image of the right eye is larger than that of the left, the leaf room will show the following characteristic distortions:

- (1) The left-hand wall appears nearer than it actually is, the right-hand wall farther.
- (2) The left-hand wall appears smaller than it actually is, the right-hand larger.
- (3) The leaves on the left-hand wall appear smaller and those on the right-hand wall larger.
- (4) The stereoscopic relief of the leaves on the left-hand wall appear less than they actually are; those on the right-hand wall greater.
- (5) The vertical line at the corner where the left-hand and back walls join, appears shorter.
- (6) The back wall appears to recede away to the right.
- (7) The floor appears to be inclined down to the right.
- (8) The ceiling appears to be inclined upward to the right.

Actually to measure and correct aniseikonia, a special instrument has been devised. It is called the Eikonometer (from the Greek ikon-image,

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nister-measure, meaning measurer of images). Essentially the Eikonometer consists of a head rest, two groups of test lens cells, and an Eikonic target.

To insure the required accuracy, the head rest is of elaborate design. Its purpose is to hold the patient's head so that the eyes are in a fixed position relative to the test lens.

The test lens arrangement consists of two parts, namely: The cells for holding the refractive test lens, and the image size measuring units. The size measuring devices are four adjustable size lens units, each consisting of a telescopic system of two lens elements designed in such a way that a change in axial position of one lens relative to the other, changes the magnification of the combination without appreciably changing the power, the system being afocal or of zero refraction. One of the units in front of each eye has variable "overall" magnification; the other is a "meridional" magnification unit, that is, its magnification is variable in only one given meridian.

The Eikonic target consists of a central fusion disc with four lines radiating horizontally or perpendicularly. At the end of each line is placed a pair of small arrows, each numbered and opposite each other. By means of polarized light and filters before each eye, the even numbered arrows are seen with one eye, the odd numbered arrows with the other. Any size difference is instantly shown. The eye with the largest image would have the arrows seen by it more widely separated than those seen with the other. Measurement of aniseikonia then merely consists of increasing the magnification in the eye which had the smaller image until the arrows are directly across from each other in each of the four pairs. When this is done, the percent magnification needed to equalize the two images can be read from the magnification units in the Eikonometer. The test is always made at both distance and near.

After the amount of aniseikonia has been determined on the Eikonometer, the problem is to provide spectacle lenses for the patient which not only correct the refractive errors if any are present, but also the aniseikonia. The lenses which accomplish this are called Iseikonic lenses. The task of designing such lenses is, in general, very complex. Not only must the power and the magnification requirements be fulfilled, but the lenses must also have good field properties. They must not be too heavy, and their appearance must be acceptable.

Several types of spectacles can be used for correction of ammetropia combined with aniseikonia. Optically, the simplest is the so-called fitover type. This consists of ordinary spectacle lenses over which one or more size lenses are placed as "fitovers", similar to sun glasses you have seen.

As these usually are heavy and cumbersome, and not of a very good

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appearance, single lenses are usually designed which correct both the aniseikonia and ammetropia. This is accomplished by the use of bi-toric lenses, lenses which are cylindrical on each side both front and back. Almost every pair must be computed by calculating the magnification produced by curve of front surface, power of the lens, thickness, and distance which they are to be worn from the eye--truly a complex task.

It has been demonstrated that aniseikonia is rather common. In fact practically everyone has a slight degree of size difference. In actual clinical practice a pair of eyes which are emmetropic and orthophoric (no error and perfect muscle balance) are extremely rare. The average amounts to about a plus one-half diopter sphere and one prism diopter of tendency to divergence. In aniseikonia an amount of about one-quarter to one-half percent size difference is considered normal.

The average person will have a sensitivity to aniseikonia of one-quarter percent. That is, changes in image size on the Eikonometer can be detected if of only one-quarter of one percent. Some people are even more sensitive, and, of course, others have rather poor sensitivity.

Interestingly enough, the greater the size difference, the lower the sensitivity. As the size correction is worn, however, the sensitivity will rapidly increase. After a few months of wearing Isekonic lenses, a much more accurate estimate of the size error can be made.

Because a pair of eyes have this size difference, it does not follow that necessarily. In prescribing for aniseikonia four things are generally observed. The correct refraction is tried, orthotics are tried, diet, and general health is corrected. If none of these eliminate the discomfort, then and only then is a correction for the aniseikonia made.

People have a tolerance limit for size differences just as they do for every other type of eye error. What is the downfall of one will not bother another person at all. Somewhere in the sensorium is a mechanism which can compensate for aniseikonia. As long as the error is within the individual's tolerance range, no trouble is experienced.

The amount of size difference this mechanism can overcome is amazing. We have already noted that as one reads across the page only as his fixation is at the center of the book are the images equal. Mathematically a difference in the relative size of the dioptric images as much as ten percent is demonstrated. Yet clinicians find that in general one and one-half percent usually causes trouble. Over five percent usually represents the limits of binocular vision beyond which the eyes either turn in or out, or the vision from one will be suppressed.

To explain this a parallel must be drawn. The average pair of ordinary spectacles amounts to about one-half diopter in strength, either astigmatism, farsightedness, or nearsightedness. Yet up to twenty years

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of age the eye has an ability to exert ten or more diopters of accommodation. This correction is only one twentieth of the total ability of the eye to adjust itself, but complete relief is obtained upon this slight addition. When we read the eye exerts five times the amount of such an error, but no trouble develops.

It is only when a basic error exists such as a muscle imbalance, error of refraction, or aniseikonia, in addition to the normal physiological deviation for secondary positions of fixation, that the patient may be considered clinically as being under a handicap, and his ocular symptoms amenable to correction for size, muscle imbalance or refractive errors.

As the mechanism producing tolerance seems to be a nervous type, it is dependent upon the general nervous condition. Any affection of this may at any time lower the ability to withstand the effects of aniseikonia. I said before that one of the greatest benefits of this new work has been in the elimination of migraine headaches. Another great thing can also be claimed for it. Among many of the patients that come to Dartmouth are those called, in medical terms, neurotics.

These are people whose main complaint seems to be that of a mental nature.

Regardless of what is done for them, they still have grief. Each attempt at a cure seems to produce results for a little while, but nothing permanent can be done. Many of these have been found to have appreciable size errors. Correction of these size errors has brought a complete change in personalities. In fact, neurotic tendencies can be listed as one of the most important subjective symptoms of aniseikonia. A little later I shall give some case histories which will bring this out.

You will remember that this work began in 1928. Considering the short time during which it has been a clinical entity, much work has been done. At this time there are about six clinics and several private practitioners doing the work. Only twenty-one men are qualified by their training to write Iseikonic prescriptions. The percentage I have quoted, have been those reached by comparison of all patients handled by all practitioners and clinicians. Percentage success from correction of aniseikonia holds to an average of seventy percent successful. This is seventy percent of all those given an aniseikonic correction reported definite and complete relief, some persons obtaining their first comfortable vision in many years. One of these was Albert Wiggin, internationally-known writer. You may have read his articles in the Cosmopolitan Magazine or Readers Digest.

One thing holding back progress in aniseikonia has been scarcity and expense of the equipment. Due to the exactitude and precision with which Eikonometers have to be made, only a limited number have been built.

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Dr. Hutchinson, of the Los Angeles School of Optometry, has authorized me to invite any one interested to visit the clinic. Our Los Angeles clinic was set up last January. Dr. Edwin McLaughlin is clinician in constant attendance. Due to other committments, I attend periodically. If I am not there, I am sure he will be glad to answer any questions or even make an Eikonic demonstration upon any of you that may request it.

I can think of no better way to crystallize the abstract theories and confusing terms to which you have been exposed, than by means of a few case histories, which I have taken from the records at Dartmouth Eye Institute. I want you particularly to notice three things about each case. Violent headaches; trouble with reading; and last, each person would fall into the psychological group of neurotics. I do not mean that every patient suffering with aniseikonia is of the neurotic class; but, could not every person here wearing glasses have been termed neurotic to some degree before the use of lenses to over come eye difficulties?

Case Report No. 1

Mrs. C.F.I., No. 8716, housewife, age 27 when we first saw her on November 2, 1939; she complained of various visual disturbances which prevented her from using her eyes. These visual disturbances occurred previous to and following severe attacks of headaches with nausea and vertigo. For the past five or six years the eye symptoms consisted of scintillating scotomata; transient blurring of vision; pulling of eyes; and the feeling that her eyes, as well as objects looked at were constantly jumping or vibrating; this was especially marked when looking at objects which consisted of lines--such as a radiator or rows of print on paper--the movement seemed to the patient to be chiefly a lateral one. The asthenopic symptoms were practically constant, but were most marked before and after a severe headache. The occurrence of the headaches was somewhat variable, from one to four per month. No history of migraine in the patient's family could be located.

Before being referred here, the patient had undergone very thorough physical examinations, but nothing significant enough to explain her eye and head symptoms was found, and a diagnosis of migraine had been made on four different occasions by the specialists at one of the large city hospitals where the patient had been observed for over a period of a year and a half. The patient was wearing the following glasses:

R. #1.00D. cyl. x 90 (20/15)  
L. #0.75D. cyl. x 90 (20/15)

She had had numerous corrections since the age of sixteen, without significant relief. Our external examination of the eyes showed only a slight chronic conjunctivitis and blepharitis. The pupils reacted normally; tensions were normal; no nystagmoid movements; normal versions, and the ophthalmoscope showed the media clear and the fundi negative.

## Morrison 14

By retinoscopy and subjective tests the following refractive error was determined:

R. #1.75 -1.00 x 180 (20/15)  
L. #1.75 -1.00 x 180 (20/15)

With this correction, the phoria for distance (20') was orthophoria to  $\frac{1}{2}$  degree exophoria, while for near (16") there were normal limits, and the patient had 100% depth perception on the calibrated Keystone card.

The tests for aniseikonia were made using:

R. #2.00 -1.25 x 180  
L. #2.00 -1.25 x 180

since it was found on the Ophthalmo-Eikonometer that this correction balanced most exactly the conjugate foci of each eye. It was found that for distance, the right ocular image was relatively smaller than the left to the extent of 1.00% overall (i.e., both horizontally and vertically), whereas for near, the right ocular image was relatively smaller than the left, in the vertical meridian, to the extent of 1.75%.

We loaned the patient a temporary pair of glasses correcting her ammetropia and aniseikonia, and she reported six weeks later that she had not had a single headache, and that she had been able to use her eyes with comfort for even such tasks as reading and sewing, which had previously been impossible. Our recheck on the Ophthalmo-Eikonometer gave substantially the same findings as before, although it was noted that the patient was much steadier and able to make finer judgments, such that the difference between the distance and the near findings was now only 0.25% compared with 0.75% in the horizontal meridian on the previous tests.

Our next report from the patient was two months later, when she again stated that she had been quite comfortable and free from headaches. She related something quite unusual in her letter, from which the following is quoted: "Apparently one of these headaches started in my sleep, for when I opened my eyes the scotoma was quite evident. Judging from past experiences I had had it for five minutes. I was really amazed--I had almost forgotten what a migraine headache was--but in a second that same panicky feeling was there and I dashed out of bed, put on my glasses and began to dress. It all happened so suddenly that it seems like a miracle--for inside of three minutes the whole thing had vanished and my vision was absolutely clear. Way in back of my eye was the dull throb of the tail end of a headache. I felt a bit of nausea, but in a few minutes I ate breakfast and found that my appetite was fine. This was the first time in my five years of experience that a headache stopped for anything, so I do feel quite elated". The patient mentioned that on the night before the headache she had read a long novel and also

## Morrison 15

completed a cross word puzzle.

Comments: This is a case with symptoms very much like those of a migraine. While working for a commercial artist at the age of about sixteen, the patient first began to have some nausea and vertigo, but no headaches. Glasses were obtained and the patient gave up her job with the artist to accept a position as governess, which she held for five years. Beginning when she was nineteen years old, the migraine-like headaches occurred, accompanied by visual disturbances which at first lasted about ten minutes, but in a few years had progressed so that they lasted for several hours. It is interesting that it remained for the eventual correction of some latent hyperopia and aniseikonia to fully relieve the symptoms, despite the fact that numerous physical examinations, X-rays, basal metabolism tests, allergic tests, ocular and dental investigations, etc., were undergone by the patient before she was finally comforted by the correction of the previously unsuspected optical errors.

Case Report No. 2

D. T., No. 2259, female, freshman in high school, age 14 when first seen, October 5, 1936; complained of frontal headaches for about one year following reading of about one hour, also some eye fatigue, itching, and blur when reading. Physical condition was reported negative and there was no family history of headaches. No previous glasses; vision 20/15 in each eye; refractive tests showed emmetropia O.U. The muscle balance was normal, 1 degree exophoria for distance and 4 degrees exophoria for near. Tests for aniseikonia showed that the right ocular image was relatively smaller than the left in the horizontal meridian to the extent of 2.00%.

As a result of the tests in October, 1936, the patient was loaned--

R. 2.00% mag. x 90  
L. Plano

which she wore constantly for three weeks, at the end of which time she reported that she had had no headaches and that her reading and studying did not bother her.

In June, 1937, (having worn the aniseikonic correction for eight months), the patient reported again that she had had no headaches and no significant discomfort from reading except a slight fatigue during examination week, which she attributed to studying at night later than usual.

We did not hear again from the patient until this winter (December, 1939) which is over three years since we first saw her. The patient reported that she had been comfortable with the aniseikonic glasses, which she had worn practically all of the time, because she had found that when she removed the glasses, her headaches would return. The patient in the past few months had to do more reading and studying and had begun

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to experience some eye fatigue and a few headaches; also the frame was beginning to be uncomfortable. Rechecking on the Ophthalmo-Eikonometer showed that the aniseikonic correction could possibly be reduced  $\frac{3}{4}\%$  (i.e., from 2.00% to 1.25%); however, as the frame was out of adjustment, and as we wished to recheck the findings we had the frame straightened and advised the patient to wear the same glasses for another week—which she did, but reported that although she felt better she had had one bad headache after long studying. Again a recheck on the Ophthalmo-Eikonometer showed that the 2.00% lens on the right eye was over-corrected by  $\frac{3}{4}\%$ . Accordingly we replaced the 2.00% lens on the right eye with a 1.25% lens, and since this change she has been free from headaches and otherwise comfortable.

Case Report No. 3

T. H., No. 1464, college student, male, age 21 when first seen, May 25, 1936, complained of occipital headaches occurring three or four times monthly without any definite connection with the use of the eyes; with the headaches there was nausea but no scotoma. These headaches had been present since childhood; his father, all his life, had similar headaches which had been diagnosed as migraine by several doctors. The patient reported that many thorough physical examinations had been essentially negative.

The patient had been wearing, for the previous  $1\frac{1}{2}$  years, the following glasses:

R. -0.25 cyl x 90 (20/15)  
L. -0.25 sph. -0.25 cyl x 90 (20/15)

The patient stated that these glasses did not influence his headaches. Ophthalmoscopy was negative. Our refractive tests disclosed:

R. -0.37 D. sph. (20/20)  
L. -0.50 D. sph. (20/20)

Muscle balance was orthophoria for distance and 2 degrees exophoria for near; ductions and depth perception were normal.

The Ophthalmo-Eikonometer showed that the right ocular image was relatively smaller than the left to the extent of 1.25% overall, (i.e., horizontally and vertically).

We prescribed glasses which would correct the slight myopia and the 1.25% aniseikonia. The patient has worn these glasses since May, 1936, and has reported on numerous occasions since then, the last time being only about a month ago, that his headaches have been reduced considerably if he wears the glasses; he has experimented by leaving the glasses off for a time, only to find that his headaches are more frequent. In a period of a year and a half when wearing the glasses quite constantly he had only two headaches—as compared with three to four per month with

## Morrison 17

his former correction. He has also reported that if he is not wearing the glasses and the headache begins, he can "cut the headache short" by putting the glasses on. He has found that once a headache starts without the glasses on, if he puts the glasses on, the headache will last only about three hours, as compared with 24 hours without the glasses.

Comments: Naturally, we do not wish to imply that an aniseikonic correction is a specific for migraine, but we think it advisable to state that, as in the case just mentioned, we may, by the correction of some ocular error, relieve some "trigger point" which at times sets off the charge giving rise to migraine-like symptoms. It does not appear possible to rid such patients of all their attacks, but to reduce in frequency and severity the occurrence of these attacks, for which the patient is of course grateful.

Technically, perhaps, we should not continue to class a case as migraine, after it has been discovered that a certain therapy relieves the symptoms. The definition of migraine 2,8 implies that is a condition for which a definite focus has not been discovered; therefore, once it is disclosed that the eyes are mainly responsible for the production of the migraine-like symptoms, the classification of the case must be changed.

As yet aniseikonia is but in its infancy. It has been only a clinical identity since 1928. It will grow, however, to become a very important part of eye care and comfort. Some day screening tests for aniseikonia will be given as a part of every practitioner's refractive technique, just as now depth perception, field studies, reading rates, fundus examinations, and so on are made.

As a factor of vision, it will become more important to you as teachers. Any single eye condition that can cause total disability at near, bad headaches, and neurotic tendencies, or a necessity must interest you. Eventually a screening test which can be added to the visual tests most schools are giving now, will be available. However, until that time, determination of aniseikonia must depend upon a complete general refraction, intelligent questioning and shrewd diagnosis.

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## READING READINESS AT THE KINDERGARTEN AND EARLY FIRST GRADE LEVEL

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I would like to begin this discussion with the premise that reading is psychological, based upon the child's entire adjustment to his physical, his intellectual, his social and emotional life. Only thru this entire adjustment can language development be stimulated and encouraged. Adults, teachers or parents, must always show evidence of interest and understanding of the small child when he has made a real effort to express himself. There is nothing so discouraging as the feeling of being overlooked, let down, or lack of interest attitude on the part of the adult. Insecurity, embarrassment, backwardness, and other negative psychological effects are so often caused by adult attitude toward the young child at home or at school. To this idea as a starting point I will present a reading readiness program for Kindergarten and early first grade.

Reading involves more than the printed symbol. Adults have unwittingly neglected to recognize, to a certain extent, those factors which are so basic in an ideal reading program in the Kindergarten primary level. The over anxiety of wanting the child to know the alphabet, to read a book, to do number work, has blocked the understanding of these adults to the fact that there is a colorful weaving of a concept pattern of which we hear too little. When does a child begin to be interested in reading, in arithmetic and in writing? It is long before we realize it that this desire is present. Let us consider the very young child in his reading readiness program as one of the most valuable concerns in our school system. The cause of reading difficulty discovered early is much easier than the remedy after he is expected to have learned to read.

Long before the child enters the five year old period, training the ear should begin. A baby is entertained and he is eagerly aware of and pleased with his mother's voice singing lullabies. This enjoyment comes even before the spoken voice, because of the rhythm and the variation of tones. From the singing voice comes the songs without music, the Mother Goose Rhymes and other jingles which are repeated to him by his adults. These jingles and lullabies are fixed in his mind without tiresome effort. It is given to him step by step under happy and entertaining experiences. There has been no actual necessity or pressure for him to learn. This method and at this early age, both the realism and the fanciful in literature may be begun. A great deal could be said concerning the preschool child, and a reading readiness program for him. However, since the school takes this child in his fifth year, we are concerned at this point and with a forward planning.

We must remember that it is a vital experience for the child going from the home to school. Many children have not had the opportunity to

## Newby 2

have playmates near or perhaps none of their own age. In the home he is the center of interest, while at school he is only one of many. He is involved in many changes in his daily program; home ties are loosened a bit, excitement of regularity of going to school each day at a certain time, the strangeness of meeting new friends, the anxiety of looking to a new adult other than his parents as his guide, perhaps walking or riding some distance to school each day, new habits are necessarily forming and there is interest in meeting new experiences.

There are sometimes definite reactions upon the child causing strange and unusual behavior which takes time to become adjusted to normal behavior. He may temporarily become noisy and forward, or backward and shy, or throwing himself upon the floor, or physically ill with homesickness. This is a period of rapid yet steady physical development. Are these problem cases or are they psychological readjustments to readiness for new situations?

Here is where we call upon well trained primary teachers, teachers who are best adapted to live with small children, teachers who are fond of them and understand home and school situations. Only thru this influence is it possible to build a normal and functional reading readiness program.

Let us assume that the number of children in each group is reasonable, and that there are not too many outside pressures upon the teacher so that she may proceed with a program. When the child first enters Kindergarten he must be identified quickly with his own name in order to put him at ease and produce within him a sense of belonging, a feeling of security at least with his teacher. If Tom is his name do not carelessly call him Bob, and do not say "little boy, what is your name", or "I can't seem to remember your name." Adults do not relish this form of impersonal greeting and children are as sensitive as adults.

When the child listens and talks and works with others he is developing tools which are necessary parts of the reading process. The ability to express oneself and to communicate successfully with others is an essential foundation for reading.

Note the personality adjustments as early as possible. Watch for irregularities in vision. For example, does he carry his head on one side, does his hair hang down over his eyes to cause a peeking out appearance, does he squint, or bat his eyes? Is it difficult for him to judge distance, for example, as in bouncing and catching a ball? Does the child seem to look out of one eye and then the other?

Equal in importance to vision is hearing. Watch for irregularity in hearing. Irregularities in hearing very easily could be confused with inattention or absorption in thought, etc. Does the child normally respond when spoken to, does he catch the conversation of his

## Newby 3

companions? Is there a marked difference in interest when he sits far from the teacher as she tells a story, and when he sits near her? Does he strain every nerve of his body and his eyes as he listens when he hears the voice?

Then there is the child with the speech difficulty. The teacher will find a few who will lisp, one or two who stutter, many who talk too loud and those who talk too low, and many other speech peculiarities.

Many times peculiarities in speech, in vision and in hearing are cases which should be referred to specialists. Fortunate is the school system which includes in its personnel, specialists in these fields.

Become acquainted with the parents and home in order to build a comradeship and interest between pupils, parents, and teachers in relation to home and school. Early in the year endeavor to discover what causes various children to cry, to destroy, to falsify, to exaggerate, to daydream, to stay by himself, etc.

This interest on the part of the teacher is continued throughout the year. At the same time this psychological study is being made, a reading readiness program is evolving. The program necessarily weaves itself about the child according to his interests, his environment, his home condition. In considering interests, environment and home condition, a new field of psychology opens and presents itself. We find many problems including reading difficulties which are involved such as we find in the impoverished community and the favored community, large and small classes, the book worm, the mechanically minded, the slow, the disinterested, the pampered, the home where father works nights and sleeps during the day, the broken home, etc.

First let us set up the physical environment of a Kindergarten room. There must be at least three centers of interest, for example, the doll house, the library corner and a space for blockbuilding. Other interest centers may be used such as painting easels, clay, interesting things of nature, workshop, outdoor center consisting of large boxes, wheel toys, etc. These interests will vary. There is danger of presenting too many interests at one time which might cause distraction from the real value.

I have chosen these three main centers as examples of interest spots for language development. Reading no longer is regarded as an isolated school subject but a necessary accomplishment to nearly all human action. Thus oral expression of the English language may be early guided through the use of the doll house, the library and the building centers, etc.

Listen to the children talking together in the doll house. Words such as father, mother, brother, sister, going, store, children, baby, groceries, personal pronouns, such as my, his, her, yours, other words

## Newby 4

such as eat, sweeps, boy, girl, doll, etc., are commonly used. From the library center will be heard such words as pretty, big, see, look, that, this dog, cat, which page and the color words. From the block center will be heard such words as, big, little, long, short, give, me, that is yours, I want, boat, train, etc. Many rich experiences are necessary in order to motivate speech. The more interesting experiences, the greater the wealth of things to talk about. The correct use of words and the acquisition of a vocabulary are dependent upon understanding of these new experiences.

To make these ideas practical, may I suggest a few helps for oral expression:

1. Planning together

Example: how the station could be built, how an airplane could be made, etc.

2. Explaining

Example: how a game is played, how father painted his car, how he made the dump truck

3. Relating experiences

Example: a recent trip, description of something interesting which he has seen, telling stories either original or one he has heard read or told to him.

4. Giving directions

Example: where he wishes the ball game, how to build a block house, how to go to his home to see the new baby, etc.

5. Dramatic Play

6. Use of play microphone

7. Use of real microphone if possible.

Throughout the use of oral expression guidance must be given in the following points:

1. Enunciating plainly and distinctly.

2. Use of full sentences when talking or answering questions.

3. Note any mispronunciation.

4. Note baby talk.

5. Note lisping.

6. Note stuttering.

7. Note words which have been used with extra letter such as chimeny,

## Newby 5

followed, library.

8. Shortened words such as goin, comin, talkin
9. Modulated voice.

Oral expression leads to sight expression in that the child consciously or unconsciously is always looking for printed symbols. Following are a few suggestions for use in sight expression:

1. Recognition of pictures shown apart from story to associate the pictures and stories
2. Watching the eye movements of the one who is reading.
3. Care of books
  - a. How to turn the page correctly
  - b. Which is the front and which is the back of the book.
  - c. At which part of book does story begin
  - d. Where to find the number of the page
  - e. Clean hands while looking at the book
4. Use of simple puzzles. For instance
  - a. Matching picture puzzles.
  - b. Matching letter puzzles.
5. Striking off the dates on the calendar
6. Checking the thermometer for weather
7. Interest in the numbers on the desk clock, sometimes learning to tell time.
8. Games involving following the leader.
9. Color games—easel painting as expression of ideas
10. Visual Aids—there are many experiences valuable for children which are not available to them. For this reason many fine visual aids are provided. I have in mind large chart pictures and slides. Fortunate, again, is the school system which provides for its children a fine visual aids department.

Suggestions for use in hearing expression which may easily be enlarged from your own experience:

1. Following directions.
2. Games, rhythms and music involving loud and soft music, slow and fast music, games of sound of voice, etc.

## Newby 6

Since the human body and mind work in rhythm then there is reason to make use of rhythm in Reading Readiness. Objects, sounds, and activities are connected with certain other sounds. There are many short and simple rhythms to be played on the piano to aid the child in sounds and word meanings. Examples:

1. Train in action, ch or sh. Whistle--toot, toot
2. Skipping slowly and singing I am skipping, I am skipping, tra-la-la-la-
3. Walking--we are walking, we are walking
4. Swinging--Now we swing high and now we swing low.
5. The Cow says Moo--there's milk for you.
6. We are hammering, hammering, etc.
7. Ball--bouncing, bouncing, one, two, three, etc. Ball-bouncing, A,B,C,D, etc. There is no harm in getting the rhythm of the alphabet--it comes easy and is remembered as a game.
8. Galloping horses--galloping, galloping.
9. Strutting turkeys--gobble, gobble
10. Humpty Dumpty, etc.

We must watch for the rhythm of the child's action:

1. Does he have balance.
2. With what speed does he walk, skip, and talk.
3. Is he growing rapidly
4. Does he seem to catch the meanings of directions too late to intelligently join the group, etc.

In considering a growing vocabulary there is involved more than just words. Very important factors are the lip and mouth movement and the use of the vocal cords. There are interesting characteristics of children in their expression in talking. Some speak with very little lip movement to a degree of not being plainly understood by the listener while others use the lips and mouth when talking with a marked degree of movement. The latter is preferable. There are many delightful games which may be played to aid the former type of lip movement. For example, place a sheet of thin paper before the face and pronounce such words as when, what, and why, so that the breath when pronouncing the

## Newby 7

first syllable slightly blows the paper. Find the words which seem unusually closed and devise your own games which give the desired result. By all means do not make these games exercises or drills, that in itself would bring about the opposite results. Many times this condition of tightness of facial muscles is brought about because of a feeling of being ill at ease, fearful of hearing his own voice. Both eyes and vocal cords respond in much the same way under pressures of fear, strain and emotional unrest.

Knowing how to relax and rest is very seldom associated with reading or reading readiness. As a matter of fact it is so closely associated that its full value is missed. By relaxation I do not mean rest in the sense of remaining upon a cot a certain length of time in an immovable position. But I do mean a time to stretch in relaxation, to yawn, to roll easily, to flop down on ones stomach, to put ones hands at the back of the neck in a comfortable way. May I emphasize yawning as a delightful and very useful means of letting go. To produce this form of letting go, find a comfortable spot where each child may have plenty of room preferably on a rug. After each has flopped or rolled, etc., into a restful position then in a soft melodious voice tell the story of the little lamb who yawned and yawned himself to sleep, or how the baby brother yawned and yawned as he settled himself for his nap. Make up your own little stories and use the stories which the children would like to add.

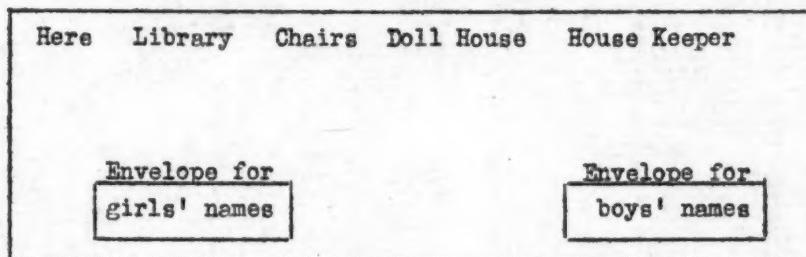
Discriminations, number concepts and relationships are most valuable in meeting with new experiences. Discriminations such as in colors (red, blue, yellow, purple, brown, etc.,) between materials (wood, cloth, paper, gold, silver), between opposites and similarities(rough, smooth), or (top-bottom, up-down, over-under, left-right, narrow-wide) and the number and shape relationships (large-small, round-square, long-short).

Reading involves writing and both involve muscular coordination. So often do we hear, "my child has enjoyed his play in the Kindergarten and now that he is in the first grade he will have to get to work". As a matter of fact, physically, mentally and socially he has been getting to work, but by the way of the play way, which is the child's way, and not the drudgery way which is an adult way. How can the child read when he hasn't yet learned how to coordinate his eye muscles and arm muscles in order to use the long handled paint brush in easel painting without spilling paint? How can he learn to read when his eye muscles and his leg muscles do not coordinate well enough to get the child up and down stairs successfully or to strike the head of a nail with a hammer or carry a book across the floor without dropping it? There must be a physical and psychological development stage for large and small muscle coordination.

It is always wise to experiment with new ideas which might be of value to reading readiness. One which I tried out this year and which was of great value to my group I would like to share with you. I have

Newby 8

a large chart with a back of celotex, with hook arrangement in the following manner:



Every child's name is printed upon a large card. Each day I charted the cards of the children present under "here" and under each of the other headings of duties I placed a card bearing the name of a different child. Each duty lasted a week. Each child having a duty could choose helpers, if he wished. It wasn't long before each child knew his own name and charted his own name card. Of interest to me was the fact that the children were helping each other in recognizing their name cards and getting a real enjoyment out of it. This game served a double purpose, first it gave each child a real sense of satisfaction that not only did he have a real sense of ownership of a name which he could recognize but second, he felt a real part in the Kindergarten program. You may ask of what use could name recognition be in Kindergarten. All pictures were labeled with name of child and date, all sweaters, coats and caps were labeled, all books, toys, and other articles which each child brought to school were marked with the individual name. At least one word was truly his own and quickly recognized when he went to the first grade.

I have said a great deal concerning reading readiness in Kindergarten. Having had experience watching the Kindergarten child's progress in his primary reading I am firmly convinced that with a full freedom of expression and where reading concepts are fixed in his mind, under conditions of delight and pleasure, without some effort, the child's physical and psychological reaction in steps to reading is easy and sure.

The Kindergarten and first grade teachers should consult together the needs for Reading Readiness in relation to first grade and each individual child.

When the first grade teacher receives the incoming class she is wise if she first studies the cumulative records and other evidences of growth, knows the background and history of each child. From this point the Kindergarten program should be carried on as nearly as possible in the first grade to the program from which he has been guided. The time element for this varies according to the interests and personalities in the group. A sudden break in the learning situation as

## Newby 9

might be in the Kindergarten first grade promotion is extremely detrimental. It is true that the physical environment is different but it should not be necessarily different. A certain amount of change is stimulating and a certain amount of newness in the program is essential. However, avoid sudden changes. The main interest centers are present in the first grade, the library shelves and comfortable chairs beside it, the doll house (in a much smaller space and simpler in form) and a block building center, etc. Possibly a different set of blocks is presented, smaller in size and variation which are stimulating.

It has been a long standing, and I hope an out-dated idea, that reading is the first thing that is taught in the first grade. As a matter of fact the reading readiness program continues almost entirely throughout the first grade. At the beginning of the year there is evidence of immaturity of many children. They are still in the babyhood stage which should not be changed or pushed but guided. Often this stage can be detected by the lack of interest, lack of expression on the face, constantly making excuses to leave the group such as getting a drink, never looking at a book with interest, shy and self-conscious.

To develop an interest in and power to read must first come the cultivation of a taste for and interest in books. On the book table, when he first enters first grade, are story books in which are familiar stories which his Kindergarten teacher has told to him, "The Three Bears", "The Three Billy Goats Gruff", etc. This one of his first joys. He can actually handle a familiar story. Since he has practically memorized the story he can look at the pictures and retell the story. Since he knows the story he is inspired to draw or paint his own picture. When this is completed the teacher can print the name of the story he has produced with the child's name also. Example: under the picture painted of the three bears in the woods, he quickly associates pictures and words together. Soon, if the words appear often enough the child may distinguish letters or even words which he has learned. He may find letters which he already knows in his own name. What a sense of satisfaction he now feels. His desire to know and read more is stimulated. The child is now in the looking process. He will want to know what it says under the picture in the book or on the wall. The interest of the child is captured. This is the association of familiar pictures and stories.

Another method is to encourage each child to bring to his teacher any picture he has made. It might be a bear, a house with garden, a boy playing ball, etc. Immediately the teacher should ask the name of his picture and while he is looking on, print the dictated words under his picture.

There is a possibility of interest in a weather record chart. Each chart bearing a word describing the day's weather. Example: cold, windy, sunny, snowy, etc. Above the word is a picture which illustrates the word printed below. May I suggest other similar charts illustrated by pictures which may be used at the opportune time, a chart for clean

## Newby 10

teeth, for bank day, days of the week, calendar, library day, etc. Large story charts, pictures from magazines or pictures made by the children may be used. These same kinds of charts may profitably be used in Kindergarten.

Small books may be made from the individual illustrations and the story printed by the teacher. This may be their first book. This is a great thrill for them. Many times one may find the child has mastered the use of many new words. This is the beginner's first reading material and is developed thru his experiences. Later he finds similar stories from books on the library table to those in his first regular printed book.

From what sources may the child obtain new information and new experiences in the classroom? The science table has a wealth of interest and an opportunity to learn new words and expressions not found in their readers such as the magnet, microscope, experiment, slides, acorns, pine cones, seeds, rocks, cotton, feathers, badges, scale to weigh rocks, etc. An entire reading readiness program and, first steps in reading could be based upon science and nature study. There are so many possibilities for experimentation simple enough for their use and understanding. It is an exceedingly valuable means of expression in a remedial group. Other sources of experience is the garden and outdoor pets, simple excursions visiting near by things and places of interest, regular visits to the library where they may browse, etc. Thru this informal program which emphasizes individual tastes and interests, basic reading skills are easily, normally, and interestingly, learned. The child gains confidence in his ability to understand, develops interest and helps the child to build a sight vocabulary more effectively than abstract drill. He feels comfortable and adequate to talk with the rest of his friends and family. He is beginning to feel a sense of power when he has gained the ability to read printed words.

A balanced reading program should include psychological growth in self-confidence, curiosity, personality, enjoyment of books and pictures, experience and satisfaction. All reading material must be very simple and meeting the needs of the individual child. Grouping children according to readiness is essential, providing simple material over a longer period of time for mastery is necessary.

As we think through and plan a reading readiness program let us remember we are also assisting children physically and mentally in becoming well-adjusted, well oriented personalities, and to help them achieve success as social beings.

## PROCEDURES FOR DEVELOPING COMPREHENSION IN READING

Marguerite Nordahl, San Diego State College

Procedures for developing comprehension in reading are evolved in terms of one's conceptions of the field. Hence, we should agree what we mean when we use the word reading before we discuss procedures for developing comprehension. Reading has been commonly conceived as behavior with regard for printed word forms only. It has been considered largely from the standpoint of the nature of the printed symbols and from the behavior stimulated by questions about the printed symbols. Consequently, major emphasis has been given to the development of books to stimulate reading of word forms and to the regimentation of students recognizing and comprehending printed words. Behavior with printed material has been considered to be in a category in its own right.

Conceiving the reading process in terms of only printed symbols is too limiting. An intelligent understanding of the reading process involves interpretation of the intrinsic nature of the behavior that is activated. Behavior that leads to a maximum degree of insight in adaptation and to the creation of continuously more effective control of the environment should be the goal of all teaching. The stimulation of such behavior necessitates conceiving reading in terms of discriminative thinking. Discriminative thinking with regard for printed symbols is dependent upon one's discriminative reactions with all aspects of experiencing. Meaning does not exist within printed words. The words are only the symbols for ideas. Too frequently they are considered to be the ideas rather than the stimulus for the creation of ideas. The creation of ideas is dependent upon the reader. Reading is a process of making meanings, and the reader can project into printed symbols only the meanings that he possesses.

Hence, recognition and comprehension of word symbols are only specialized aspects of the reading process. If one does not possess the concepts for which the printed symbols stand, he cannot achieve the meanings that the writer intended. For instance, the zoological meaning of the term "grenadier" is, according to Webster's New International Dictionary, "any of the certain marine anacanthine fishes constituting the family Macrouridae. They mostly inhabit the deep sea." Unless one is an ichthyologist or has observed fishes in an unusually discriminative way, he is likely to have limited experiential bases concerning grenadier fishes. His concepts will evolve chiefly through interpretation of fishes that he has seen. If he attempts further to refine the concept through the word "anacanthine", again the meaning will be dependent upon his background of concepts. Definitionally the word means, "an order or suborder of teleost fishes, having all the rays of the median and pelvic fins soft and jointed, the pelvic fins thoracic or jugular in position, and the air bladder, when present, usually without a duct. . . . " et cetera.

The meaning which an individual projects into reading of symbols is

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dependent largely upon his experiential background of reading of actual things. Reading of things is a much more direct process than the reading of symbols which can only stimulate ideas about things for which the symbols stand. Reading of things has been pertinently termed "primary reading", and the implementation of "primary reading" through the reading of word symbols has been comparably termed, "secondary reading".<sup>1</sup> This differentiation is a very helpful one; and it will be used throughout this paper. It challenges one to the awareness that reading of things is a more direct process than "secondary reading" and that it is basic for "secondary reading".

To analyze procedures for "secondary reading", reading of printed symbols, one should first analyze "primary reading", reading of things. The materials and procedures for "secondary reading" should be selected upon the basis of the nature and the amount of "primary reading" that has been done and that is to be developed by the group of learners under consideration.

At the elementary school level, the "primary reading" of science materials can very well be one of the major sources for reading. Through observation of constancy and variation stimuli, generalizations develop which, through continuous application, lead to basic concepts. For example, children in studying the wild flowers of a given region can do a great amount of "primary reading". They can be stimulated to a high level of understanding and appreciation through discovery of the order and pattern that determine plant families. The discovery that a large group of flowers has its petals and sepals arranged in patterns of multiples of three, that its leaves are parallel-veined, and that it grows from a bulb, develops considerable appreciation for the lily family. The discovery of other families and the formulation of generalized concepts for plant classification and environmental adaptation are significant for appreciation and control of plant life. Frequently, teachers are inclined to have children read and memorize the names of the parts of flowers, the names (common and scientific) of many flowers and facts concerning plant life. The end-product is often largely a mass of name-calling habituations that may remain for years with the individual as memorized bits of knowledge and pedantic hang-overs of school learning. As such, they stimulate very little sincere thought that leads to appreciation, understanding and control of plant life. The "primary reading" of science materials leads to basic concepts that stimulate dynamic understandings and appreciation for control of that aspect of the environment. It also stimulates desirable behavioral-patterns and readiness and interest in "secondary reading" of science.

Similarly, in the field of geography, "primary reading" should lead

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<sup>1</sup> Spencer, Peter L., "Reading in the Content Fields". An unpublished lecture given at the Reading Conference of the University of California, Berkeley, California, on July 7, 1941. Pages 3 and 4.

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to a high level of interpretation of geographic principles and concepts. Children in the primary grades can readily discern and formulate basic concepts with regard for seasons, what determines climate, concepts of spatial orientation, et cetera. Map-reading that stimulates intelligent thinking leads to a high level of discriminative interpretation and is quite unlike the memorization of places on maps, the naming of the products of a given region, the building of markets to depict the agriculture of a given country, and many of the so-called "social activities" that deserve some of the criticism that is being given them at the present time.

A grade three group of children at the Campus Elementary School in San Diego has been studying Africa. An aspect of the work was map-reading and interpretation of seasons, climate, et cetera. The children were stimulated to interpret some of the determinants of climate. The distance of a given place from the equator, its elevation, its proximity to oceans, lakes and seas, the ocean currents, and mountains and rainfall are some of the factors that were developed. Through the interpretation of the above one can develop an appreciation for the people, for plant life, and for the history of a given place. The group of children who studied Africa had considerable appreciation for the people and the country and through such interpretations were able to understand much of the primitive negro art, music, customs and life.

Another illustration is in the field of arithmetic. Unless one develops the basic concepts with regard for quantity, he will be unable intelligently to control that aspect of his environment. If implementation in the form of number manipulation becomes the goal and the result of the arithmetic class, a high level of insightful control of the quantitative aspects of the environment is not likely to occur. When a teacher stimulates children to understand basic concepts with regard for quantity, it is difficult to predict the outcome. For example, a group of children in grade three has been lead to interpretation of the decimal notational system, to the process of division, and to divisor-dividend-quotient relationships. Their control of their behavior and their intense interest have challenged them to concepts and work with the interpretation of quantitative relationships of topics that are listed for several grades above their grade placement. The writer is not advocating that the grade placement of such topics be changed to conform with this specific group of children, but it is evident that insightful behavior that emerges from reading primary sources is much more dynamic than that which results from following pages in a book.

Too often the pages to be covered in books become the goal of the teacher and the children rather than merely a means to stimulate a high level of discriminative thinking. When reading of word symbols becomes an end in itself, the meaning that the reader creates is often relatively insignificant. Rudyard Kipling in writing of his early childhood speaks of being introduced ". . . to two very impressive things--an abstraction called God, the intimate friend and ally of Aunty Rosa, gene-

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rally believed to live behind the kitchen range because it was hot there--and a dirty brown book filled with unintelligible dots and marks. Afterward he learned to know the Lord as the only thing in the world more awful than Aunty Rosa--as a Creature that stood in the background and counted the strokes of the cane. But the reading was, just then, a much more serious matter than any creed. Aunty Rosa sat him upon a table and told him that A B meant ab.

'Why?' said Punch. 'Why does A B mean ab?'

'Because I tell you it does', said Aunty Rosa, 'and you've got to say it.' For months, against his will, Punch stumbled through the brown book. He repeated till he was thrice weary 'the Cat lay on the Mat and the Rat came in.' Then, in a venerable magazine, he found a portentous picture of a griffin, with verses below. This glimpse of new worlds was so tantalizing that he decided to read everything.<sup>1</sup>

Kipling was, no doubt, an excellent reader of things, and when reading of printed symbols stimulated his thinking of meanings about things, he turned to "secondary reading".

Procedures for developing comprehension for reading of "secondary" materials, and I reiterate that I refer to reading of printed symbols, can be developed only in terms of the amount of "primary reading" that has been done. Until teachers develop within themselves the power to stimulate a high level of thinking with "primary reading", they are likely to stimulate behavior for "secondary reading" that leads to a body of information and facts that become the main goal of education. Ralph Tyler in his chapter, "The Relation Between Recall and Higher Mental Processes" states that, "Interviews with college students indicate that more than 60 percent of the students in college believe that the chief duty of college students is to memorize the information which their instructors consider important. The emphasis given to recall of facts in typical college examinations is one of the chief reasons for the existence of this belief. The vast majority of examinations mainly require students to remember and state facts presented in textbooks and lectures. It is not surprising that students think of memorization as the fundamental requirement in education."<sup>2</sup> The process of memorization of facts leads to a high level of insight into basic relationships and to a high level of discriminative behavior in one's control of the environment. That it does is certainly open to question. Tyler attempted to determine this relationship through data obtained from the Ohio State University examinations. In courses in the fields of zoology, statistics, chemistry, botany, geography, and several other fields, tests

<sup>1</sup> Kipling, Rudyard, "Baa Baa, Black Sheep". Reader's Digest, Vol.30, 12-5, April, 1937.

<sup>2</sup> Tyler, Ralph W., "The Relation Between Recall and Higher Mental Processes". From the book, Education As Cultivation of the Higher Mental Processes, by Charles H. Judd with the cooperation of Ernst R. Breslich, J. H. McCallister, and Ralph W. Tyler. N.Y., Macmillan, 1936, Page 6.

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were given in each course to measure different aspects of learning. One set of questions tested the ability to recall information that had been developed in the course. The purpose of the second test was to reveal the ability to recall principles that had been taught and the application of the principles to situations that had not been discussed. The third test was designed to test the ability to make inferences from data that had not been developed in the course. The results of Tyler's study reveal that memorization of factual material often fails to result in the application of the facts to new situations. About half of the students who were above the average of the group in recall of information were below the average in the application of the principles and in inference. Tyler concludes that, "If the higher mental processes of application of principles and inference are really to be cultivated, learning conditions appropriate for their cultivation are necessary."<sup>1</sup>

Not unlike the procedures for developing "primary reading", the procedures for developing comprehension with "secondary reading" must be evolved through the major concern of the intrinsic nature of behavior rather than merely in terms of the stimulus. Teachers are frequently intransigent in their organization of so-called comprehension exercises with which they ask children to perform, and the performance conforming to a pattern of answers is translated to be synonymous with comprehension. Often teacher-made exercises are developed from the pattern of standardized tests which many educators substitute for use of their own intelligence and which too few analyze from the standpoint of what the test has the possibilities of measuring. Many of the test-users whose stolidity in accepting the "linguistic paraphernalia" and the simplification of the term "reading" are the same ones who are willing to resort to the repetition of exercises to the extent that the child can fluently and with fractional meanings respond to many pages of questions. That such drilling will result in other than mechanical behavior does not seem reasonable.

In my judgment, there are two main problems for teachers in developing comprehension with "secondary reading". The first is that of "reading" the class situation--each individual and the group. With all teaching this is a basic point. Reading one's pupils involves so many factors that the writer will not attempt to develop them in this paper, but the list should include reading the thinking of each individual and the group, pacing materials and stimulating in a manner such that learning is continuous and dynamic, reading each child's readiness with regard for hearing and vision, his emotional and social readiness and his total pattern of responsibility. The effectiveness of teaching is dependent upon a teacher's astuteness in reading his pupils.

The second concern in developing comprehension is that of the stimulus. The stimulus is significant in conditioning the thinking that will occur. Questions and problems that call for merely the return of

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<sup>1</sup> Ibid, page 17.

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information found in a book tends to stimulate relatively little discriminative thinking. Questions that challenge interpretation and application of concepts stimulate critical thinking. Teacher made materials and materials that are selected from textbooks and workbooks should be analyzed from specific points. A list of some of the factors which are important are listed below:

1. Materials should be selected that have the potentialities to stimulate discriminative thinking.
  - A. Questions should be used that check interpretation and application of basic concepts through
    1. observation of primary source materials and through concepts that have developed from "primary reading".
    2. organization of one's background of experience.
    3. experimentation.
    4. analogy.
  - B. Questions that require interpretation through content reading are helpful. (This is significant to the extent that the basic concepts are present within the context.)
  - C. Questions that require opinions and the application of common sense should be used.
  - D. Questions should be developed that challenge critical thinking through
    1. checking the book with itself.
    2. checking book with other books.
    3. checking book through reading of primary source materials.
2. Materials should be developed that fit the given group of children from the standpoint of the
  - A. children's background of concepts.
  - B. children's realm of interests.
  - C. needs of the group and of individuals.
  - D. nature and the difficulty of the concepts.
  - E. difficulty of the vocabulary from the standpoint of
    1. word recognition
    2. word meanings.
  - F. desirability of the material for the group.
3. Materials should be relevant and should have a high level of

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significance for the given group of children.

4. Materials should be written in a style that is clear and that is constructive for developing critical thinking, good expression, et cetera.
5. Materials should be selected that will stimulate further learnings.

The refinement of ideas should be a continuous process.

There should be established an intelligent balance of oral and written comprehension checks. At all times the goal of the teacher should be to stimulate a high level of discriminative behavior. In the stimulation of such behavior "primary reading" will be given emphasis, and "secondary reading" will be an important implementation to stimulate significant thinking. In this program thinking will be stimulated in a manner such that the reader will become master of his reading.

## PHYSICAL GROWTH FACTORS

F. Theodore Perkins, Claremont Colleges

Probably the most characteristic feature of children is that they grow—yet the nature of this growth has baffled the biologist, the educator, the physician since the beginning of recorded history. Obviously to attempt a treatment of the whole area of physical growth in a 45-minute presentation would be foolhardy, to say the least. Rather, I propose merely to indicate a few recent trends with reference to this problem and to raise some questions for your consideration.

Before giving a brief review of some significant recent studies of physical growth, I should like to draw attention to a few principles that have become increasingly evident in recent years.

### 1. The organism-as-a-whole grows. Growth is all of one piece.

Physical growth is only one aspect of total growth and must be considered in relation to other aspects. This view of growth has received full consideration only within recent years. It will be recalled that the founders of the cellular theory of biology, Schleiden and Schwann proposed that growth was merely a "multiplication of cells". This became the prevailing view in biological and medical science until the beginning of the present century when the organismic biologist began to take an opposite position, namely, that the organism grew its cells; that the cell was the end-product of growth of the total organism. Child, Coghill, Weiss and others were able to show through experimental embryology how patterns of the total organism, called growth gradients, determined the growth occurring in a given part of the organism.

### 2. Growth is the result of internal and external stimulation.

Present day thinking and research in biology is just beginning to appreciate Claude Bernard's proposition that the development of the organism could only be understood in terms of the internal and external milieu. Within recent years the internal factors have received greater attention than the external factors. Child, however, would emphasize that the fundamental unit of growth is the organism-in-an-environment and that in the fertilized egg the internal and external stimulation patterns result in a certain gradient of growth and sensitivity, namely, a surface-interior gradient.

A relatively new field of consideration which has special significance for the educator, is that of mass physiology. Here external factors of the tempo of a civilization can be shown to have an influence on the physiological functions of the individual. Metabolism, certainly a growth function, for example, is influenced by the oriental v.s. the occidental "culture-pattern". In the occident hyper-tension, a high metabolism with hyper-sensitivity, is common. In the orient, on the contrary, hypo-tension, a low metabolic pattern, is the rule. Studies have shown that occidentals with a hyper-tension pattern, with high blood

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pressure, who have moved to the orient show a progressive lessening of the hyper-tension and a drop in blood pressure. The amount of such change is a function of the length of residence in the orient. A similar influence in the opposite direction obtains when orientals move to the occident. Dietary, climatic and geographic factors cannot be shown to produce these effects. Little has been done with children in this area but it is suggestive of future research.

The external milieu for growth may then include much more than the obvious nutritive, climatic and geographic factors heretofore emphasized.

3. Physical growth must be considered in relation to social expectancies.

Let me illustrate this point by reading a conversation of a five-year-old boy. This material is part of a monograph being prepared by Mary Fisher of Vassar College on the "Universal Child".

"THE UNIVERSAL CHILD"

Excerpt from material presented to collaborators May 19, 1941  
by  
Mary Fisher  
Department of Child Study, Vassar College

This is a student teacher's recording of a monologue of a five-year old boy as he rests after his lunch. This little boy can put into words what all children feel but are not verbal enough to say about their preoccupation with not being able to catch up to people and the eternal illusion that you can do what you want to do when you grow up. He is talking to his favorite toy, an earless rabbit, as he says these things.

"Today I'm not gonna be big. I'm gonna be a little baby and you must take care of me. I can't do anything for myself. I can just lie in your lap. I'm tired of being a big boy for a while.

"It's awful the way you go on being big. Of course you want to grow big but you couldn't help it if you didn't want to. You just keep on growing. It would be awful if you didn't like it 'cause it would just go on anyhow and how sad that would be.

"But being big is the best, best thing, isn't it? When you're big everything happens, instead of just waiting to be big. When you get big you can do what you want to do and nobody tells you and you don't have to ask. You just go ahead and do what you want. And you can tell other people. That's a good thing.

"When I get big I'm not going to be afraid of anything and I'm not going to cry ever! People who cry when they are big are silly. When my mommy cries she said it's because she loves Bomsie and me and things make her sad. I guess I won't love anybody. I'll take care of mommy and Bomsie but I won't love them to make me cry. I will be very big and very

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strong and I'll kill a lot of people, and I'll take care of people if they want me to but still be all by myself.

"But not now. Today you must take care of me. I am a little baby. Only don't tell anyone that. I wish you would pay attention to me instead of always writing. That's being big. You don't have to pay attention if you don't want to.

"It would be funny if I was big and you were little. I wouldn't pay any attention to you and I'd make you do things you didn't like to. But I guess I won't ever be able to do that to you 'cause I won't ever be able to catch up to you. I won't ever be able to be the same as you at the same time. It would be funny if when you were born you were grown up, wouldn't it? And then instead of getting older you got younger and littler till you were a baby. That would be funny.

"What if that happened now? It would mix people up a lot, wouldn't it? I wish you were a baby so I could take care of you.

"Do you know how babies come? They are part of the mother and part of the daddy--Bomsie told me. If you were my baby you would be part of me. I would take care of you and feed you and give you a bath and dress you and let you come in my bed and kiss you and not let anybody shoot you. I would kill all the people who came near. Killing people must be very easy because people aren't much. And they do a lot of it.

"In the other side of the ocean, if we were there, we might be dead now. Did you know that? It is not safe there. Not many places is safe. Even this place is not very safe. There may be shooting here some day too. I wish we could run away from it, but everywhere you go there is shooting.

"It makes me dream and I wake up and cry--being scared like that.

"Some day if I grow up and I guess I will, I'll have to shoot too. Sometimes I wish I didn't have to grow big. NOW! That's why you must take care of me and we will pretend I'm a little baby and have a long time to wait till I grow big."

This highly verbal boy has expressed what many other children feel. Our culture pattern places a high premium upon physical growth in early and later childhood for both boys and girls. During adolescence and later the expectancy changes for girls but remains for boys. In such a pattern the child who grows slowly is subject to special pressures. Feeding-problems, emotional meals and the like are the result in the home; other stigma such as being chronically "underweight" are added by the school. Parents and particularly primary teachers need to rethink their expectancies concerning physical growth. The child needs to be accepted as he is and to accept himself as an organism rather than to yearn through life to be some other type of physical organism.

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Not only does this matter of expectancy apply to the gross features of physical growth but to special aspects as well. I am reminded of the case of Sally who needed glasses for school work but her mother thought that glasses made her look too old for an 8-year-old. And of course many of you have encountered the opposition of boys to glasses. Similar illustrations might be drawn from other special aspects of physical growth.

4. Growth is idiomatic not normative.

Probably no approach to the problem of physical growth has perpetuated more mis-information than the normative. This approach led us to measure a large sample of 6-year-olds and to draw up averages for the various dimensions measured. Then a different sample of 7-year-olds was measured, and so on. This led to the belief that all children should be evaluated with reference to these norms. More recent material would demonstrate that for many children these averages were completely inappropriate. The total pattern of growth for their organisms was completely different. Lawrence K. Frank has termed this the idiomatic character of the growth process for each individual. Teachers particularly with large numbers of pupils found the normative material easy to use, but at the same time did considerable damage to many pupils.

However, parents also were influenced by the normative material largely through the pediatric group. The so-called Watson period of pediatrics tended to regard all infants as identical and all requiring the same treatment and the same food. Although departures from formulae had to be made, the parent was led to believe this was an abnormal condition. Not only did this movement apply to the nutrition of the child but also to a formula for handling the child, to clock-precision schedules and the like. Many parents of this period have remarked recently that they would like to have their children over again so that they could enjoy them.

The recent material from the pediatric group shows a realization of the idiomatic character of the growth pattern of each child. Some infants need two-hour feedings, some three, some four, some five; some are interested in food to the exclusion of all else; some are interested in food only when there is little else to respond to; some need and respond to large amounts of affection, others need little.

With the newer emphasis on the period of infancy and pre-school growth, the primary teacher should be able to approach the problem of physical growth from a saner point of view.

5. Growth is continuous.

On the surface this principle is of little concern to the person interested in the early elementary school. Yet when one considers that this is an important foundation period for later educational experience and for later life, its significance is clear. That the organism never ceases to grow has become increasingly demonstrated through research studies--yet

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attitudes toward growth, desire to grow in certain directions all play a role in later life. Who of you have not known the individual who over-compensated in physical development because of certain lacks of adjustment in the classroom or others who felt inferior in any situation calling for physical prowess, but who compensated by over-conscious attitudes toward classwork. Many of these attitudes have their roots very early in the child's school experience and persist throughout the life of the individual.

Other principles might be added to these but perhaps these will suffice to give some picture of the changes in the conception of physical growth during the recent period. Let us turn now to a number of studies of physical growth.

Before reviewing these studies two features of their methodology should be mentioned. First, they are longitudinal rather than cross-sectional. That is, the same children are studied over a period of years and the changes in growth related to the individual's earlier pattern. Second, efforts are made to appraise the individual's total growth, physical growth being only one dimension of that total growth.

Fels Institute Studies

The Fels Research Institute at Antioch College under the direction of Sontag has been conducting a study of the same children over the past ten to twelve years. This study is significant in that it started with cases during the pregnancy of the mother and studied the case through the period thus far and will continue indefinitely perhaps to the death of the person. Another somewhat unique feature of this study is that the cases are in small urban or rural districts of central Ohio, representing some thirty-four different schools.

Only a few of the findings of this study can be mentioned at this time. During the fetal period, the fetus appears to be influenced by a large number of stimuli. In fact, Sontag points out that contrary to popular belief the fetus is influenced by most conditions both external to and within the physiological system of the mother. Loud sounds, running the vacuum cleaner or the washing machine caused increased motion of the fetus. Drugs, especially sedatives, stop movement of the fetus.

There are also reciprocal relations between fetus and mother as an effort to balance the metabolic process of both. For example, when the mother is hypothyroid, the thyroid of the fetus is stimulated to greater activity and greater growth to provide thyroid to the mother. This results in an infant at birth with an over-active thyroid, hyper-excitability. Subsequently, since the over secretion is not needed by the infant the thyroid atrophies thus resulting in hypo-thyroidism in the child like that of the mother. One would have been tempted to attribute this pattern of thyroid to genetic factors had not this reciprocal fetus-mother evidence been presented.

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X-ray studies of the bones of these children at periodic intervals has shown the interdependence of physical growth with other aspects of development. Bone scars representing a halting or slowing in the depositing of bone occur during illness, strong emotional stresses, adjustment problems and become a part of the permanent record of the rate of physical growth within a particular organism.

University of California Study of Adolescents.

Another study that has contributed considerably to our understanding of physical growth is the University of California Study of Adolescents. The physical growth material has been under the general direction of Herbert Stoltz. In this study children were studied from age ten or eleven for a seven year period. Evidences on earlier development were obtained from the parents and from the school record. The approximately 200 children were given a large battery of physical growth measurements twice annually. In addition, photographs were taken to illustrate the change in total body pattern at different ages and to show growth of secondary sex characteristics.

The findings of this study illustrate the principle of ideomatic growth returned earlier. There is a wide difference in the time at which a group of the same chronological age enter what Stoltz calls the cycle of puberty. There is also wide difference in the time taken to complete the cycle. (See his figures 1 and 2.)

Stoltz also finds that when one considers growth longitudinally and in terms of its velocity, that is, in terms of increments of total growth, one gets a typical pattern of growth. This pattern is found in all individuals but at differing times on a chronological time base. His figure 3 shows the schematic curve. That this is schematic will be seen from his figure 4, which shows two boys, one who matured early and one late.

In general this study shows a two-year difference between boys and girls, with girls maturing earlier. (See his figure 5). That this picture is an average one covers the fact that there is considerable overlapping between the boy and girl groups.

This study makes clear that the problems of growth during the "adolescent period" are definitely an elementary school as well as a senior high school concern.

Olson's Study of Organismic Age

Over a period of approximately ten years Olson of the University of Michigan has directed a study of the children in the University of Michigan Experimental School with a group of cooperating schools in various parts of the country. Olson has approached this problem in an attempt to measure the growth of the organism-as-a-whole. Obviously the total growth of the individual can never be measured. Olson has attempted

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rather to measure significant aspects of the growth, pointing out that if other measures do not change the picture then the appraisal is sufficiently close to be regarded as a fair picture of total growth. In this study he has measured some seven aspects, each of which is expressed in relation to the average performance of persons of a like chronological age. These include mental age, reading age, educational age, height age, weight age, dental age, grip age; to these he expects to add some measure of social and emotional adjustment. The average of all these ages gives the organic age of the individual. Olson appears to find that this organic age gives the best single index to placement of the child in school. He also finds the profile of ages useful.

In general the growth as represented by these aspects of growth appears to be a total process or a process all of one piece, since the various seven aspects are highly in agreement. In some cases, however, Olson finds what he calls split-growth, cases in which, for example, the physical growth factors are accelerated and reading age and educational age are slow. Such a case would be regarded as a reading problem by our present practice and would receive in many schools remedial instruction. Olson finds, however, that in these cases of split-growth, the individual's growth comes together at a later age--and without remedial instruction! He questions whether remedial instruction should be given such cases and suggests that it may be of actual harm.

There are many other studies which we might consider but these illustrate certain newer points of methodology. I should like to close by raising a few questions for your consideration which will point to the need for in-school research on this factor of physical growth.

1. What should we measure on physical growth factors?
2. How can we treat measures so that the results will be usable to teachers.
3. What are the implications of findings on physical growth for grouping of pupils?
4. Is the age-grade typing now used sound?
5. Should we re-examine the whole grade level structure of the school. Could we have a more flexible scheme? If so, what?
6. How can teachers guide child to accept physical growth?
7. Have we considered physical growth factors adequately in relation to reading program?
8. Have we used the symptom of lack of book reading as if it were a cause?
9. Is there a certain amount of remedial work in reading that is attempting to remove a symptom rather than discover the causes?
10. Have teachers been approaching the field of reading with evidence from cross-sectional studies of growth and development? What are the implications of an idiomatic conception of individual growth for reading?

## READING ACTIVITIES IN THE INTERMEDIATE GRADES

Lois Perrelet, Supervisor of Remedial Reading, Merced

To clarify the discussion of reading activities I have taken the liberty to classify them under three headings.

First is the free reading or literature program. The objectives of this program are two fold. First it should provide the child with extended and enriched experiences. It should give him an opportunity to experience a variety of interesting and important experiences and thoughts that selections have to tell. However, literature will do more than give him an opportunity to relive experiences. The child is also able through reading to enjoy new experiences indirectly. So it is the reliving of experiences and the gathering of new experiences that the teacher should provide for in teaching the literature program.

Secondly the literature program should build permanent interests in and proper tastes for good literature, as well as desirable attitudes toward reading. Unless this objective is reached, there is little justification for the literature program.

But, unless the pupil catches or relives the experiences in the literature he reads, he will not develop a desire to continue such reading or will he develop permanent interests in reading. So, if the first objective is taken care of the second will come as comcomitant learning.

<sup>1</sup> McKee and <sup>2</sup> Witty have outlined possible programs to be followed in preparing the literature program. I refer you to these sources and will make no attempt to discuss possible procedures.

The next type of reading activities may be classified under the basic program. This program should develop the basic study skills necessary in order to do the reading required in the different subject fields in the fourth, fifth, and sixth grades.

Assuming that the reader has the necessary mental capacity for understanding the material, to do the reading required, he must possess some of the concepts presented on the page. Then he must possess certain skills which will enable him to construct the author's meaning by using the concepts which he brings to the material. Or, briefly, he must possess certain organization skills. In our basic program we must be concerned with developing these organization skills.

The third type of reading activities may be termed the primary reading skills.

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<sup>1</sup> McKee, Paul, Reading and literature in the elementary school. Houghton  
<sup>2</sup> Witty, Paul A. Reading and the educative process. 1939, Ginn and Co.

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These are those skills or mechanics of reading which should have been mastered at the first, second and third grade levels. This phase of the reading program should be confined to those who have failed to master the mechanics of reading, namely, word recognition and comprehension at the primary levels. Between 20 and 25% of the children at the intermediate grade levels lack the necessary skills in mechanics to read the material required of them. If they cannot recognize the words on the page they can hardly be expected to be able to read the page. And if they have not mastered the ability to understand and interpret the material they read accurately they are not reading. So our job in this phase of the reading program is to help those, who have difficulty in the mechanics of reading, overcome their difficulties and develop the necessary skills.

It is not possible to provide a detailed analysis of all the knowledges, skills and habits which go to make up the ability to comprehend. However there are a few basic skills which it may be well to mention. These are: (1) a knowledge of the meaning of common words and phrases; (2) the ability to recognize strange words; and (3) the ability to recognize sentences as units of thought.

However, in word recognition it is a little more possible to analyze the jobs to be done. The child must learn to recognize words and phrases instantaneously and he must develop some method of arriving at the meaning of a strange word or of recognizing strange words.

In the past, most of the work done to improve word recognition and comprehension has been to increase the amount of material read by providing simpler material and then to work more intensively using methods and materials that have already failed to make the child a good reader. This method has proved largely unsuccessful, however. True, extensive reading of simple material will improve the sight vocabulary somewhat, but not enough to overcome the child's difficulty.

To develop word recognition with poor readers we must provide materials and methods which will overcome the child's difficulty. If reading and re-reading of simple material has failed to help the child in the past, a continued emphasis on the same method and material will not prove successful in the future. Most children who have difficulties in word recognition lack adequate knowledge in phonetics. The first thing the child at this grade level needs is some definite training in phonics. However any training given should be systematic and purposeful. The principal problems in setting up a program in phonetics are how to determine which word elements to teach and how to provide the necessary practice and necessary material so that the child may become familiar with the word elements which he needs to know.

"We Read, Write, Speak and Spell", Books 1, 2, and 3, is a set of books which provides a systematic program for building a sight vocabulary and developing word analysis by providing definite and systematic training in phonetics. The books are ungraded and are to be used with

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the child according to his needs rather than according to his grade placement. Book 1 presents the initial consonants and builds a sight vocabulary. A child reading at the first level must start by building a sight vocabulary and using the initial consonants as one clue in recognizing strange words. The only children needing this book at the intermediate grade levels are those classified as non-readers. Books 2 and 3 provide practice on the vowels. Book 2 covers the short vowels, while Book 3 covers the long vowels and vowels affected by consonants and other vowels.

In using the material, the authors suggest that the child first be given practice in hearing the sounds of the vowels, since the auditory training is necessary if the child is to learn and use the elements in word analysis. Secondly, he must be given an opportunity to use the sounds in unlocking strange words. The word lists provided in each lesson give the child an opportunity to do this. Then since he must be able to blend the sounds together in order to determine what the words are, he should be given some practice in oral blending. Also there must be a constant check on mastery. Some of the quickest and most satisfactory checks are testing the child's ability to write three or more words from memory or from dictation. Another check on mastery is to test the child's ability to read the word lists quickly and accurately. Then the test lessons given in each book not only test the mastery of the word list given but also test the mastery of the different vowels. These lessons are an essential, check on the child's ability to distinguish the sounds of the vowels when several different vowels are presented in one lesson. These lessons are the final check on mastery, for unless he has mastered the individual vowel sounds he probably will not be able to distinguish the similarities and differences in the word list. The lessons in each book provide practice in as well as a systematic check in comprehension.

The use of this material will accomplish several things. First it will develop a systematic method of word analysis, it will increase the sight vocabulary, it will aid in developing some of the basic skills in comprehension and it will provide the teacher and the pupil with some definite material for improving the basic skill or reading mechanics.

Now to return to a more detailed discussion of the work to be done in the basic program.

#### The Organization Skills

In reading geography or history or any other subject matter the reader first must recognize the words on the page. Second, he must be able to select the important ideas as he reads, that is, he must be able to eliminate detail and select the crucial words, and thus be able to understand each sentence as he reads it. This means he must understand the words in the sentence.

Some children may have a language handicap and be just word readers. Others may take part of the sentence as the main idea and overlook or not even see the main idea of the sentence. In the following sentence

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many students even at the college level failed completely to find the main idea:

"When they came to this country to live, the Spanish explorers brought sheep which were the beginning of the great flocks of sheep we find in America today."

In this sentence those making errors in determining the main idea of the sentence said that "Spanish explorers brought sheep to this country" was the main idea of the sentence.

Their difficulties in finding the main idea of the sentence probably are due to the fact that the sentence is long and some of the readers became lost in its detail. Thus they have not learned to eliminate detail and pick the crucial words or ideas.

Difficulties in understanding sentences may be a difficulty in understanding individual words. One graduate student when asked the meaning of "upstream" said it meant "up the ocean". After being given this sentence, "Once each year the salmon go upstream to spawn", she was asked to tell what upstream meant. To clarify the meaning of the word she was first asked to define the word "stream" for which she gave the definition "a kind of river" and then she said that the salmon went "up the ocean near the shore by the river". What kind of meaning could she possibly get from the sentence with such erroneous word meanings at her command?

What possible meaning can children get from the following sentence if they have erroneous concepts for the word "bay"?

"This lovely city of San Francisco is located on San Francisco Bay"

A group of 6th and 7th grade children who lived within a few miles of the bay were asked to tell what a "bay" is. Some of the answers were as follows: (1) A bay is between two cities. (2) A bay is an ocean. (3) A bay is a bridge. (4) A bay is sand and water.

Many difficulties in understanding what is read may be prevented if each reading assignment is preceded by proper development of concepts in the readiness part of the lesson. Also much work should be done to make the child conscious of meanings so that he will demand accurate meanings.

If the reader does understand all the individual words he still may not understand the sentence. He must also understand the relationship of the ideas in the sentences.

In the following sentence there are no words for which the children do not know the meaning, but still many 5th, 6th, and 7th graders had difficulty with the sentence:

"Some fishermen like to fish in ponds made by beaver dams".

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In a group of thirty children from the 6th and 7th grades only fifteen were able to construct the meaning of the phrase, "ponds made by beaver dams".

One child who knew the meaning of all the individual words said that ponds made by beaver dams are where beavers get a drink; another said it is where lots of beavers live, and another said it holds water back from the beavers' home; another that it is a bank of trees.

This ability to organize smaller meanings into larger meanings or to see the relationship between parts of a sentence is a crucial factor in the ability to understand not only sentences but paragraphs.

In a paragraph the reader must again be able to select the crucial ideas or sentences and eliminate the irrelevant ones. In some paragraphs one or two sentences receive the most emphasis while in others all the sentences in the paragraph are of equal value. In many paragraphs are sentences or ideas which add nothing to the meaning.

If the reader is to achieve a high degree of meaning he must be able to synthesize the word-meanings into phrase meanings, the phrase meanings into sentence meanings and the sentence meanings into paragraph meanings. It would seem that in reading paragraphs, if he understood the various types of paragraph organization he would be better able to achieve a maximum of meaning.

An analysis of the different types of material used by students shows that paragraphs may be classified according to types of organization. These are as follows:

1. The enumerative type: In this type of paragraph the main idea is not contained or stated in one sentence but is a combination of the ideas in all the sentences. For example:

"To be an insect when full grown an animal must have six legs. It must have two antennae or feelers. Its body must be divided into three parts, a head, the thorax, and the abdomen. Most insects have two large compound eyes made up of many tiny eyes."

2. The sequential type: This type of paragraph is similar to the enumerative, with one exception: the sequence of ideas in the paragraph is vital to the meaning of the paragraph. For example:

"The beautiful cecropia moth we see on summer evenings was first a very small egg. A little black larva or caterpillar hatched out of the egg. After it ate and ate its skin became too small and split and out came a new caterpillar. It kept eating until it had shed its skin or moulted four more times. After the fourth time it stopped eating and began spinning a silk thread from its mouth around and around itself. In its silken case called a cocoon it slept all winter on the branch of a tree. In the spring the caterpillar which had been changing inside its case into a full grown moth pushed its way out of the cocoon into the world."

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3. The explanatory type: In this type the entire paragraph explains one word, idea, or sentence in the paragraph. The explanatory type is of two varieties, namely, explanatory-how, and explanatory-why. The paragraphs with the why relationship seem a little more difficult than the how relationship. For example:

"All the men had been chosen to go on this ship because they were strong and healthy as well as daring. They had seemed to have plenty of food during their months at sea. Every day they had been served meat, potatoes, white bread, sweetcakes, and tea or coffee. Yet it was found that a lack of certain foods had made these strong men ill. As soon as the men were given fresh milk, vegetables, and fruit to eat, they quickly got well."

In this paragraph most of the students, even at college level, failed to see that sentence four, "Yet it was found that a lack of certain foods had made these strong men ill" contains the main idea of the paragraph. This is true because, sentences 1,2, and 3 are proof that 4 is true, or in other words these sentences explain sentence 4. The last sentence gives the positive proof that sentence 4 is true. The relationships in this paragraph are difficult because many readers fail to see that serving all the food they were served explains why the men seemed to have plenty of food; they fail to see the why-relationship in the paragraph.

The following paragraph, which is also an explanatory type, is much easier because the relationships are of the how type.

"At first each pioneer family often raised the sheep, sheared the wool from them, spun the wool into thread, and wove the thread into cloth to use in making clothes. But the invention of machinery to weave the cloth and spin the wool has changed the farmer's work. He now raises the sheep and sells its fleece to wool dealers who in turn sell it to the great woolen mills.. When the farmer and his family need woolen cloth or clothing they buy them at some store."

It is much easier to see that the second sentence, "The invention of certain machinery has changed the farmer's work", is the main idea, while the rest of sentences explain how this has come about.

The four types of paragraph given above are the common and important ones with which the child needs to be familiar. If the students are given definite drill in first selecting the main ideas of each sentence and then given some practice in diagramming the paragraphs to show the relationships there should be a definite growth in the organization skills. Factual material lends itself to this type of work much more readily than the literary type. Each type of paragraph should be studied until the child is thoroughly familiar with it, then he should be given practice with the various types. The enumerative types are much easier than the explanatory types so they should probably be studied first. If the child then has learned to synthesize or organize smaller meanings into larger meanings he has learned a thing of great value in

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achieving a high degree of understanding in his reading.

The second valuable method of acquiring new meanings in reading is that of constructing the meaning of a strange word phrase or sentence from the context in which it occurs. This process requires an understanding of the context itself and the ability to analyze this larger organization of meaning and thus to determine the exact meaning of an individual word, phrase, or sentence.

The ability to construct the meaning of words from the context is important as a means of increasing one's vocabulary and in determining the exact meaning of a word, phrase, or sentence in a given context. Some children have developed this skill to a high degree while others achieve no meaning, vague meanings, or inaccurate meanings.

Children in third and fourth grade were given the following sentence to read:

"Instead of waiting for the corn to ripen, many farmers cut it while it is green. Then they put both the stalks and ears through a machine which chops them in small pieces. In this form the corn is known as ensilage!"

These children read the sentences aloud individually and were then asked to explain what "ensilage" means. Two children said that ensilage was a machine, a corn machine; two other children said that ensilage was green corn. These children knew all the words in the sentence except the word being defined, but they failed completely to find the necessary clues for the meaning of the word. Even though the clues are present in the context, the context contains clues for a reader only in so far as the reader himself sees relationships between and makes inferences from meanings given.

This type of reading difficulty is also shown as follows: A group of children in fourth, fifth and sixth grades who did not know the meaning of the phrase "pine barrens" were asked to read the following sentences and try to construct the meaning from the context.

"On the coastal plains of New Jersey there is a section where the sandy soils are so that for many years nothing but pine trees grew there. Today hundreds of acres in the 'pine barrens', as these lands are called, are cleared of trees and used for cranberry bogs."

The answers given after reading these sentences were as follows:

Age of Child

12 years

trees used for cranberry bogs

13 "

trees--they grow hundreds of them

12 "

pine barrens--a place where trees have been

11 "

pine barrens are a place to grow cranberries

10 "

are a place for cranberries

8 "

berries of pine trees that grow in a

8 "

place where it is sandy

pine barrens means people made cranberries.

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We may say briefly that the ability to construct word meanings from context depends upon

1. The ability to see relationships between word, phrase, and sentence meanings in the context.
2. The ability to infer meanings.
3. Language facility in paraphrasing the meanings in the sentences and paragraphs.

To develop this ability the child must first develop the ability to see relationships. If he is given much well written material with concepts clearly defined by the context and then guided in learning to detect clues and infer meanings, he should gain much valuable skill. All such work, especially until he has become quite skillful, should be done orally.

In conclusion, the basic skills which a child must have in order to understand the material which he is expected to read are, first a readiness to read, and then two basic reading-thinking-skills, namely (1) the ability to synthesize smaller units of meaning into larger organizations of meaning and (2) the ability to construct meanings from the context in which they occur. If proper training is provided at the succeeding grade levels in these skills many difficulties in understanding may be overcome.

## TECHNIQUES FOR SOCIAL ADJUSTMENT INVOLVING READING ABILITY

Etta S. Pfister, Director of Individual Guidance, Burbank City Schools

Techniques for the promotion of the involved condition of social adjustment need to be as varied as the individuals we wish to assist and will be as varied as the individuals working. There are some general procedures, however, which will prove beneficial to anyone working toward more satisfying social adjustment:

We might say it is always necessary to (A) take the student where we find him; (B) carefully survey the conditions surrounding him; (C) the background of the child and his family; and (D) attempt to decide where he is going. This is a brief resume of a rather thorough procedure which is necessary to adequately work with cases of maladjustment.

### A. Where have we found him?

Certainly the first thing we will do is give some attention to the condition of sight and hearing. This should always be the first "thing to do", but is one of the most frequently forgotten. This may be true because of the fact that an adequate examination of sight and hearing is not available in an ordinary school. Another reason might be that it is difficult to obtain such examinations for children from homes where the economic conditions are low average. It is usually rather convenient to arrange for physical examinations of children from families who are desperate or for those who are both intelligent and economically secure. In regard to the case where a suspicion of the condition continues after one examination, it is frequently advisable to have a second or even a third. The fact has been proven many times that a second or even a third doctor found a source of infection which had escaped the two previous physicians. Another caution might be that where there is an indication of a physical complication an optometrist does not feel free to diagnose. There are many other physical conditions other than difficulty of sight and hearing which affect reading ability and social adjustment, but certainly these will be taken up or have been considered at this reading conference.

1. Granted that we have eliminated possibilities of physical difficulties, where is this child according to standardized reading or adjustment tests?

2. After all, what is his general ability?

3. What is the actual level on which the child is reading?

4. What are the social maladjustments which we consider this child to have?

5. What are the social maladjustments that another individual close to this child, such as the teacher, the parent, the Sunday School

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teacher, or the Scout Leader, observe?

6. What are his assets?

When these questions are answered we have a fairly good idea of where we found this child.

B. What conditions surround him?

What kind of a home is he in? What kind of a classroom is he in? What is the social structure of that classroom? Is he chosen by other children? Is he desired and liked by other children? Is he shunned? Why? Does he like his teacher? The fact remains there is very little to do to help promote a happy adjustment until we understand to as great a degree as possible as much as we can about this individual. It is true, I am sure, that we can never know another individual, but we can approximate such a knowledge to a greater degree than we have. Are there other children in the home? Is there sibling rivalry? What is the dramatis personae in this picture? Is a grandmother influencing the situation by reading to the youngster and otherwise supplying his least wish? Has someone told him such and such a person, such as Uncle John, grandfather, father, or older brother never learned to read much, but he got in the Navy and look where he is today? Are there interesting books in this home to read? Is there any stimulation by anyone to pick up a book or to do any type of limited research? In our so-called better homes it is not at all uncommon to find an expensive, beautiful, and important arrangement of books which would interest any adult, but completely shuts out the pupil. What are the opportunities in regard to motion pictures, magazines, and newspapers and yes, funnies? With careful selection and direction, these sources are invaluable.

C. The background of the case.

Occasionally we find parents of foreign background who are able to give the children only a very limited vocabulary and during the many hours and weeks when they are not under the influence of the school, it is necessary for some of these pupils to limit the vocabulary they do have. The conditions in which we find this pupil may also be producing maladjustments, such as the punishing, rewarding, and shaming of the pupil who is reading up to his mental age, but that age is much lower than the chronological age. Thus we see how the background and conditions surrounding this child have made him what he is.

D. Where is he going?

It sometimes takes a very brief survey to note that this child is not maladjusted, but merely wholesomely and honestly attempting to disguise his weakness, which he has learned by bitter experience, is not acceptable. It is much more satisfying temporarily to pretend that you do not care to read or that you do not like other boys and girls than

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to admit that you cannot read and that you cannot keep up with them in your studies. This type of behavior only leads to delinquency and further attempts to gain status falsely or unsocially. Many an individual has been known to pose as an incompetent and go to a sanitorium with a "nervous breakdown" rather than to face failure in industry, college study, or other competitive activity. The adjustment of such a person or re-direction of his efforts is sometimes a long tedious job which calls forth all the initiative, knowledge and skill of several sciences. Perhaps there are certain procedures that might be generally helpful. As I mentioned before, there is no one technique for all individuals, either to use or to bring results, but here are a few possibilities:

If our poorly adjusted boy or girl has been found to have a reading problem:

1. Give the necessary attention, if possible at all, to the correction of the physical condition, if it be mal-nourishment, glasses, or even a hearing aid.
2. Test the youngster according to standardized reading tests and note specific errors in oral reading.
3. Note weaknesses and strengths in background and conditions surrounding the pupil.
4. Now begin the re-training. You see it is acknowledged that we have discovered that this child, with a personality maladjustment of one sort or another, is unable to read at all comparable with the group in which he is placed; therefore, we have decided that it is his reading which is the source of his difficulty and producing his symptomatic behavior. In this re-training period, as in every other type of re-training period, drill should be short and persistent. Do not make the grave error of substituting this re-training period, which is no doubt going to be distasteful to this young reader, for his hobby or play time. Select some other time of the day, if at all possible. If it can be worked out, always select a time when both the teacher and pupil are fresh and composed. It seems to me it is always very well to discuss the entire problem and program with the child and arrive at a decision to better this condition, together. By all means attempt to have rapport and cooperation when you begin. Base the new work on the level of achievement and direct particular effort toward specific areas. Increase the difficulty of the work very gradually, thus avoiding discouragement and confusion. Pick out, whenever possible, work on reading which is on the interest level and not the same book with which the child has had humiliation and failure. Change often, with young children particularly. For variation you might take a drive in your car and read as many billboards as you can see within a distance of perhaps two miles. Use charts, cards, slates, blackboards, or typewriter for variations. It is not a very difficult task to re-write a type of story on dogs, machinery, etc., which has been couched in

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in language too advanced for the pupil. For older students we found that a re-write of the important paragraphs of the Vehicle Code was particularly interesting. While there is a re-training program under way in the schoolroom or by a special teacher at school, parents should cooperate with the program in whatever way is decided upon. It might be well for them to assist by indirect methods, such as playing simple games with the child, Anagrams or Authors. A mother might ask the child to help her label books, kitchen shelves, flowers and plants, rather than to do some extra actual coaching to help the teacher. In the beginning of the re-training period, this is particularly confusing. We have had one successful case where the mother had the little girl read favorite recipes to her and then they baked cookies and candy according to that recipe, thus attaching a very pleasurable worthwhile experience to reading. The philosophy of most school districts insists that retardation should be considered favorably in the first few years of school, but that the older child should be given remedial work as much as possible rather than a general class retardation. Do not neglect or spurn manual activities. Encourage these youngsters to do this type of work if that is their interest field. It may be that their future life's work will be in manual activities and their reading will always be secondary.

Adjustment Techniques for A School District

There are a few general procedures which administrators can remedy.

- A. It is advisable for public school systems to provide a district worker in remedial reading who is well trained, likable and has rapport with parents as well as students. The work is technical and painstaking and certainly demands a certain type of personality. If the teacher is thoroughly disliked by the pupil, it will be very difficult to double the two dislikes and remedy a bad situation.
- B. The promotional policy of a school district should be fairly well defined so that teachers will see the difficult problems early and either retard the child or remedy the defect as early as possible.
- C. It is extremely helpful if there is a clinic available where teachers and principals may refer difficult problems of adjustment and where causes can be ferreted out. Symptoms often belie the cause of the lack of adjustment. In juvenile courts and adult courts, we are punishing some individuals every day for crimes of violence of one kind and another, whose original offense in the world was the fact that they cannot read.

## SOME ASPECTS OF SEEING, PERCEPTION, AND VISUAL RE-EDUCATION

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Seeing may be observed from different viewpoints by the educator and the optometrist. And, yet, the viewpoints must be rather closely related. The educator thinks of seeing as the prime means by which the mind of the student obtains knowledge. The optometrist, on the other hand, while recognizing the educational aspects of seeing, is particularly interested in the visual act from the standpoint of psychology, physiology, and to a limited degree, pathology. His chief concern is with the functional mechanism of seeing rather than with the end result although, of course, correct functioning usually brings about correct end results.

Seeing does not take place in the eye or by the eye. Seeing is purely a mental act, the eye merely being the means through which the mind obtains the necessary stimulus from the light resulting in the mental interpretation by the mind of the presence in space of some object or being. The interpretation by the mind we call seeing. Dr. A. M. Skeffington says, "Seeing is the mind seeking knowledge through the brain. The brain demands a clear and single image. The clear image is obtained through the focusing reflex, and the single image through the triangulation reflex. These two functions combined form the visual reflex, which is purely a physic one."

Incidentally it is highly interesting to realize that the act of seeing is the only one performed which employs two nervous systems at the same moment in bringing about one result. The focusing reflex is innervated by the autonomic or the involuntary system while the triangulation reflex receives its stimulus from the somatic or voluntary nervous system.

Educators have long had a profound interest in seeing. In 1925 Ohio State University set up a very complete laboratory to investigate the psychology of vision. This department was placed under the direction of an able scientist, Dr. Samuel Renshaw, who since that date, has devoted his studies almost entirely to this subject. Recently he was prevailed upon to write a series of papers for the Graduate Clinic Foundation setting forth some of the results of his research and experimentation. His first paper was presented in October of 1939 and was entitled, "What can experimental psychology contribute to optometry?".

According to Renshaw, vision and visual problems are common grounds for many divisions of science. Certainly the fields cannot be confined to the optometrist, and the ophthalmologist alone. Physics, physiology, and neurology describe what is known about the eye, how it is arranged for the reception of changes in the patterns of light, and how these physical events in the retina produce impulses in the sensory nerve fibers. These impulses then pass to the brain and on to certain effector organs of the body, muscles, and glands. Thus we see that sight not

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only affects the eye, the retina, and the brain, but also muscles and glands throughout the total human organism.

Generally speaking it can be said that a large part of seeing is not done with the eye at all. Vision draws heavily upon the other sense modalities, particularly the skin, kinaesthesia (muscle, tendon, and joint sense) and the ears. Whenever I say, "This anchor looks so heavy I doubt if I could move it", I am speaking figuratively. Nothing ever really looks heavy. Heavy is a judgment. We make it when we attempt to overcome the inertia of a mass by shortening certain groups of muscles.

Similarly, other senses borrow from vision. Much of what we hear derives from watching the speaker's lips, his gestures, and the play of the facial muscles.

Since afferent, or incoming, impulses from sight, hearing, and touch are all correlated in the mid-brain, and, since in all the ordinary affairs of everyday life the perceiving of things is participated in by almost all of our sensory-motor functions, we hear more and more discussion of the unity of the senses and less and less about each one, separately considered from the others.

When you are told that 85% of all our impressions come through the eyes you can set it down as a statement that is unprovable. Eyes are important and do supply a large percentage of our impressions, it is true, but it is likewise true that everyone sees more than is furnished by stimulus objects and, we not only supplement what is physically present to be seen but it is a well known fact that we may suppress large portions of the field comprising the stimulus pattern.

Extremely interesting is the fact that we see things not on the retina, not in the eye, not in the brain, but out there in space. Why should this be? Can we find the answer to this question in texts dealing with physics, geometric optics, physiology or neurology? We cannot. Then, obviously, we must be dealing here with a fundamental problem which belongs specifically to the field of psychological optics.

It is a fact that the position in space of an object, its size, shape, and relative brightness, motion, etc., are seen by the observer in a way not predictable by anything we may deduce from the size, shape, position, etc., of the hypothetical retinal image. This fact of external reference proved to be an important discovery in the psychology of seeing. It shows us that seeing objects in space outside the body is a common habit, learned from early infancy, and capable of extensive modification through training, as we shall prove.

We might say that psychology has as its sphere the science of seeing, whereas physics and the biological groups are concerned with the mechanics of vision. Seeing is definitely something more than vision,

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although vision is the most important and essential part of seeing.

In his paper submitted in May, 1940, titled, "Tachistoscopic Studies on Visual Perception", Dr. Renshaw brings forth and proves some very interesting facts concerning seeing as a function. Perception, he says, consists essentially in the emergence of a figure upon a ground. Figure has shape and appears solid and highly structured. Ground is weak as to form and exists as undifferentiated substance.

Generally, figure has surface color, that is to say its color is localized on the surface and is resistant to penetration. The color of the ground is filmy, soft, yielding, and not sharply localized. Specially the figure appears separated from the ground and the separation may be seen in front of or behind the actual surface of the ground.

Figure usually possesses sharp and strong contour, but this is not always so. Where figure is unenclosed and equal in brightness with the ground, although of different color, the figure will appear unstable and ill-defined. When contour is introduced the figure becomes stable, well defined and localized and its color hard and glossy, rather than soft and spongy. Figure generally has "thing character" and is more insistent and more central in awareness and is likely to have connected with it various meanings, feelings, and aesthetic values. Figure is named sooner and remembered better because of its greater impression.

Weaver has studied extensively the phenomenon of the emergence of figure from the ground in perception and has proved that the emergence of the simplest form takes place in a period as short as 10 milliseconds. Investigation has shown that the time necessary for a figure to become perceptible varies with its complexity and meaning.

A tachistoscope is used in these investigations. Essentially it is a device which enables the experimenter to control the duration of the exposure, the size of the visual field, the quality and intensity of the illumination, the size of the eye opening, the instructions under which the observer operates and a number of other similar factors.

Our earliest studies on the speed of visual perception were made in 1933. Dr. Salo Finkelstein, a Polish lightning calculator, visited the laboratory. This man could perceive and remember lists of numbers from exposures shorter than had ever been recorded for any human being.

An interesting thing revealed by this study of vision is that by means of the short exposure we can study the process of perceiving in its early stages by stopping it after the stimulus has been acting for any duration we may select. Numbers are an excellent material because they can be presented in small or large groups and have no hampering associations.

One of the first important problems which we have studied extensive-

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ly is the relation between the length of the material exposed to the eye and the time required to perceive and reproduce it. The amount of material which can be reproduced in a single brief exposure is called the span of visual apprehension. The number of digits, letters, words or figures which can be apprehended in a single exposure has said to be limited to seven. The presumption has been that the limiting factor is the size of the image at the retina in relation to the size of the macula. We have been able to show that the para-macular field can be greatly extended through training. Seventeen letter words, double spaced which subtend a visual angle of 14 degrees at the lens, could be perceived and reproduced correctly in an exposure of one millisecond.

If we expose letters in 36 point type on 5 X 9 white cards, we may determine the speed with which words of varying length can be perceived. Dr. Finkelstein established the following records:

<u>Number of Digits</u>	<u>Time of Exposure in Seconds</u>
8	.003
10	.264
12	.824
14	1.16
16	1.73
18	2.44
20	3.55
25	7.01
32	25.4
42	45.00

These figures represent world records since the subject of the tests was highly developed. The average individual will require from 20 to 70 seconds to perceive and memorize a 16 digit number the first time he tries it in contrast to Finkelstein's time of 1.73 seconds. However, the magnitude of the gains from practice is the first striking fact revealed by these studies.

It will be noted that the addition of 2 digits to 8 increases about one hundred fold the time for visual perception. Further, whereas 8 digits requires but  $3/1000$  or a second, 16 digits requires 1.73 seconds or almost six hundred times as much exposure.

Up to 11 or 12 digits they are amalgamated into a unitary impression without grouping. Numbers containing more digits are first seen as aggregates of small sub-groups. The process of training means that these groups undergo a gradual expansion. For example, 16 digits may be seen as four groups of four, five groups of three plus one, two groups of eight, or as a unitary group comprising all sixteen.

If we photograph the eye movements of the subject early in his stages of practice we observe the characteristic stepwise movements seen

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in ordinary reading. When we have trained this same observer to the point where he now perceives in 1/10 to 1/20 of the original time, photographs show that the eyes make a single sweep without pausing throughout the expanse of the visual material.

When we use lists of consonants, meaningless geometrical forms, or meaningful words, we get essentially the same results. The process is the same regardless of the contextual material.

Many interesting and important facts were revealed by an analysis of the observer's behavior before, during, and after the exposures.

The tendency of the novice is, of course, to pronounce what he is seeing concurrently with the visual exposure. They all soon discovered that this provided a serious handicap. Verbal activity during the exposure weakens and inhibits the visual impression.

A good rule to follow is to advise any person, who wishes to use vision with maximal effectiveness, to engage in no other activity during the period of visual impression.

The question may arise as to whether the above results, obtained upon a world famous expert in dealing rapidly with numbers, do not represent a function different from that found in ordinary persons. In order to check such a postulation a number of people, twelve university students, were likewise trained. In every case the shape of their curves was identical with that of Finkelstein and in two cases of extended practice not only was Finkelstein's record equalled, but in several instances, bettered by these students. In fact, one of the very best subjects encountered in the course of the experiments proved to be the negro janitor of the building housing the laboratory.

Here we have a fact of great importance. The limit to which visual perception can be extended through proper training is still unknown. It is certain that it can be improved to an almost incredible extent if the observer is willing to work and utilizes the proper methods.

The difference between the expert and the novice in the rapid and accurate perception of visual material is the same difference between them in the performance of any act requiring skill. We have to learn to see just as we have to learn to swim, play the piano, or speak French. This can be done with skill and efficiency or haltingly and ineffectively. When children are trained to spell words by replacing the wasteful and ineffective disjunctive method of seeing words with the proper method of visual perception spelling difficulties disappear. Not only does the child spell accurately and easily but he comes to enjoy it. An incidental by-product of this method is that his rate of reading and index of comprehension automatically show a corresponding improvement. Let us be sure that we do not make the mistake of assuming that this skill in seeing is the development of a so-called photographic eye, for there is no

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such thing as a photographic eye.

I would like to take time to discuss one more of Renshaw's interesting contributions to optometry called, "Reading As a Special Case of Perception." This subject should be of interest to our group and might present some viewpoints which have hitherto escaped our notice.

Language constitutes the distinctive form of human behavior. The possession of an easy and certain means of communication has been largely instrumental in the production of human culture. No other form of activity is as complex and intricate in its sensory-cerebro-motor organization as reading and speaking. Learning to talk, to read, and to use other forms of linguistic expression, therefore, represents the most difficult single undertaking that any child is ever required to master. Because of its great complexity we should expect to find, and do find, many types of disorders of this involved function.

Let us begin by realizing clearly that the earliest forms of language were not written or spoken, but consisted of gestures, postures, and mimetic and dramatic attempts to reproduce the motor patterns which would serve as the symbolic equivalents of the things perceived. Early language was therefore motor and manipulatory. It must be clear that language of any type grows out of the necessity for individuals to act cooperatively. It is proper to speak of it as a compound habit since a linguistic act is never complete until one person has conveyed his meaning to another--unless one is talking to himself.

The perfect language would be one in which the speaker would always convey to his listener his exact meaning. It is a fact of great importance that this theory is rarely attained. It is well known, for instance, that in childhood understanding runs in advance of the ability to produce expressive linguistic forms. We can well say that the mechanics of language production lags behind the processes of interpretation. By the time a child has reached his sixth years and is ready to commence his formal education one side of his language development has proceeded far in advance of the other.

Before there has been any formal training the tendency of every child is to perceive things, events, and relations in the world about him as coherent seeing. If now he starts to learn to read, he is frequently forced to adopt, what for him, is the unnatural procedure of perceiving abstract and rather meaningless symbols (words) as disjunctive perceptual experiences.

As a consequence of the disassociation introduced by the child himself or his teacher, we find, practically without exception that a youngster who cannot read effectively presents an emotional problem, because, when confronted by the need of reading a page and understanding it, he is thrown into a state of tension which leads to blocking; and there is no surer way to disrupt this complex function.

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In fact, in any learning enterprise, a defeatist attitude always sets in motion the postures and movements which conduce to erroneous and failing acts.

It is our conviction that the first step in the treatment of any reading or linguistic problem is to remove the bad habit which arises from the fact that every poor reader is keenly conscious of his own disability to perform this function and, therefore, even his initial efforts must be expressed in the face of a serious emotional blocking. We believe that the first thing to do is to convince the individual that reading can be done easily, fluently, and without great effort—and that he can do it.

So the initial step is the simple one of showing to the person an uncomplicated visual form for a long enough time so that he can see it. After a few practice sessions the time of exposure is decreased and the length of material increased, and, since the word failure and the fact of failure never enter into the situation the child quickly builds confidence.

It can be set down as a fact that whenever a person can really see a word he can spell it. By seeing is meant that he must recognize and produce the word not as an aggregate of single letters. The word becomes an essential unity.

When this skill has been attained reading will be found to benefit proportionately. The perception of groups of words comprising phrases or sentences can become a coherent, perceptual unity just as an aggregate of single letters can and does become a unitary word.

One important fact arising out of research studies of this process of building up visual percepts was the discovery that naming, pronouncing, or any other verbal motor activity during the visual impression period operates to interfere with the ease and accuracy of visual perception. When we train an individual to see, therefore, speech activities, gestures, and other motor forms of expression should be reduced to the barest minimum.

The best procedure seems to be to acquaint the learner with these facts and advise him to sit erect and on the alert and do nothing else but take a good, active look at the figure during the time of exposure.

A second important fact is that a short time should elapse after the exposure before the student engages in any activity of speaking, drawing, or other form of reproductive expression. Here, curiously enough, the process of remembering and reproducing is interfered with if we start too soon or wait too long. As one becomes more and more trained, however, this time factor becomes less important.

This second step aims to develop an active, dynamic motor attitude in the perception of visual shapes and this function is enormously sus-

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ceptible to training, as we have previously shown in the case of Finkelstein and the university students.

After a sufficient stage of proficiency in the skill of visually perceiving form has been achieved then pronunciation, phonetic training, and grammar, and such things may be introduced as the proper diagnosis as the situation indicates.

It should be remembered that reading consists essentially in not only the mechanical ability to see shapes of aggregates of words which are the symbols of the types of motor sets which we call ideas, but even the most perfect possession of this skill would avail us nothing in the absence of the essential perceptual frames of reference which are broadly designated as intelligence, background of experience, insight, and understanding.

The difficulty in most cases of children who present these problems is found to be in the fact that habits of slovenly perception have been called upon to perform the exacting and intricate function of perfect language, and, as anyone could predict, the end result is failure, which continually grows upon itself.

However, we must not look for a few simple rules to cover the techniques of treating all of the many distractions of perception. Every case is an individual proposition. Great emphasis must be placed upon etiology. From it the principle source of the trouble may be deduced.

It is interesting to note here, in concluding our remarks concerning this particular type of training, that in the laboratory of Ohio State University during the year of 1940, several observers were trained to such a high degree of proficiency that they were able to accurately reproduce 16 and 17 letter words after an exposure of only 1/1000 of a second.

For a moment or two I would like to summarize briefly the salient points of our discussion up to this time.

1. Optometrists and educators observe seeing from different but closely related viewpoints.
2. Seeing is a mental act.
3. Seeing is the only act performed in the human body which employs two entirely different nervous systems at the same time, to complete the act.
4. Educators have long been interested in and studied the act of seeing.
5. Vision and visual problems are common grounds for study by many divisions of science--physics, physiology, neurology, anatomy, patho-

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logy, and psychology.

6. We see things out in space—not in the eye or in the brain.
7. Perception is a vitally important part of seeing and one which can be highly trained.
8. Ordinary persons can be trained to perceive as well as can those with exceptional ability.
9. Seeing, like other activities, is a learned process.
10. Reading, to a certain extent, is a special case of perception.
11. Practically all cases of inefficient readers present an emotional problem.
12. In training an individual to perceive visual shapes it is important to restrict the subject to the one act of seeing.
13. Many of the difficulties of poor readers are due to slovenly habits of perception.

## READING THE SOIL TEXT IN THE BOOK OF THE LAND

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So far as I know, there is no such written document as "The Book of the Land". That is a mythical title that I have used whenever time and opportunity have permitted thinking in terms of our natural resources as related to our ultimate national destiny. All the subject matter in "The Book of the Land" could not be contained in a single volume or even a great library, if it were printed and illustrated. It would be too large indeed for any one person to read through in a lifetime, with its millions of stories, some tragic, some happy, and all intensely interesting. "The Book of the Land" could not be illustrated, because everywhere we look there is a different picture to behold--each look at the land is a colorful illustration in "The Book of the Land".

No man-made book, with human interpretations and evaluations, subjected to the limitations of the printed word, could ever hope even to rival the interest, drama, color or truth that is to be found in the Book of the Land that is all about us everywhere we look.

It is not with the want of a book that we are concerned today, however, but with our lack of ability to understand its language and to appreciate the full meaning of the colorful illustrations that accompany the text.

The first chapter in our Book of the Land must be concerned with the soil. It must be the soil because the mysteries and wonders of soil processes form a basis upon which all understanding of nature must be founded. All that we eat and all that we wear, with exceptions so minor as to be negligible, come from the soil. The presence of soil is just as essential as air or water to our continued existence as a nation. No understanding or consideration of a tree can possibly be complete or comprehensive without an understanding and appreciation of the soil which gave birth to it. The nature and plentifulness of soil plays a vital part in determining what grows in the soil. It is an overall, limiting factor in our lives and a part of every event, either directly or indirectly, that man is concerned with, from the time he is born until he at last returns to the soil.

Soil is not a static thing. Soil is not an indestructable or stable substance. The word "soil" is, actually, an expression that describes a state of development of an ever-changing, moving process--the soil building process used by Nature, whereby she grinds into fine particles the stones of the earth, and the minerals, and, with infinite care and wisdom, populates this mass with millions of bacteria, which have the ability to convert that raw material of the particles of stone and the dead vegetation into plant food. That is a process going on all about

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us--but, unfortunately, too few of us, as individuals, have appreciated its importance and too many now dead nations failed to know or failed to care.

The process of soil building or soil destruction is never completed, but is constantly going on from the very instant when two particles of silt resulting from two stones rubbing together are deposited on a stream bank to gather more silt from the wind and to invite the growth of lichens or moss, too tiny for the eye to see, to find plant food there. The process goes on and on, and normally Nature sees to it that, with each succeeding generation of plants, starting with the tiniest lichens or moss, a better place is made for succeeding plants, and, where conditions otherwise are suitable, it is possible to think of soil starting with dust on a rock, growing deeper and deeper, richer and richer, through countless years, until it might some time be the site of a giant redwood.

Granulated stony particles, without the bacteria, without moisture, and without the contributions made by dead vegetation, cannot be thought of as soil and cannot support plant life. Therefore, it is reasonable that we think of soil as a state of progress in a process. Poor soil is frequently one where the process has not yet advanced far enough to support plant life beneficial to mankind, or in which the process has, for one reason or another, been reversed. Good soil, on the other hand, is an indication of an advanced state of this process.

Good soil is not, and never will be, great in depth, but is a relatively paper thin coating on the earth surface, and, if you can think of this earth as being reduced in size to ten miles in diameter, the layer of soil would be represented by the thickness of a sheet probably not exceeding that of the paper on which this is written.

Good soil is perishable. It is a loose, loamy, granular substance that, when it is dry, may readily be carried away by breezes. Most of the huge dust storms in past years were caused by breezes and not by violent winds. Records indicate that those winds seldom exceeded thirty-five miles an hour in velocity. Good soil is readily carried away and torn apart by running water. If you should take the air away from good soil, or the sunshine, or moisture, or any of a number of other things that contribute to the well-being of the bacteria that are so essential, the soil would lose its fertility and productive capacity.

I am sure, being teachers, that you are all familiar with the way in which Nature builds soil at the rate of an inch every 400 years or more, and how she keeps it protected with a carpet of grass or litter as she builds. That is Nature's way of doing it, but Nature, in her planning, did not take into consideration the rise of Man--the resultant demand on the part of Man for special foods, finer foods, and more food than would have been necessary had he remained in the same state of development as are the other animals today. Nature did not reckon with,

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or provide against, destruction caused when Man put unnatural barriers around soil and put unnatural numbers of stock and humanity on limited areas to be fed and housed. Nature planned on a basis of a wider distribution of both mankind and animals and concerned herself with no such concentrations of humanity as we have in modern cities. Therefore, we have a condition today that, in order to provide the food demands of mankind, we must use our land in a way contrary to plans of Nature. We must get more from each acre of land than she would normally give us, and we must restrict the food providing ability of our soil to the plants that we are able to use, eliminating many of Nature's selected plants that would normally grow there. Cotton grows today where grass would be growing if Nature had her way. Fruit trees grow where forests would normally grow, and so on. Over the entire country we find land that has been taken out of Nature's control by Man and adapted to his own scheme of affairs--with little or no thought or regard for Nature's immutable laws or of penalties she would impose.

This violation of natural law has not been without its penalties. History is replete with tragic examples of how Man has paid for his disregard of Nature's laws governing her soil resources. Many of the ruins that dot the deserts of this earth once were thriving metropolises surrounded by thousands of acres of good and productive land. It is unfair to assume that, had not these cities arisen there these areas would have become deserts. Research workers today have established beyond any question that the same fruits and grains mentioned in Biblical times as being grown at the ancient cities now ruined, would grow in the same locality today if they had just one thing that is lacking, and that is good soil. Therefore, it is clear that something has been drastically wrong with Man's handling of the soil. It is clear that not only in these ancient countries but in our western hemisphere as well, Man has lacked the knowledge or the willingness properly to handle the soil that he takes away from Nature to grow his crops.

Farming is a technique. Farming, or using the soil in any manner to produce food, is the technique of using plants to convert the fertility in the soil into edible or usable materials for Man's needs. When we plow the land, we stir it up, allowing more oxygen to reach the bacteria whose presence is essential to soil fertility. That is the purpose of plowing or aeration. When we irrigate land, we provide more moisture for the bacteria and dissolve the minerals in the land, in order that Nature's process may more readily convert the minerals and the dead vegetation into plant food. Farming is, in its truest sense, a technique, and, quite the contrary to what is generally believed, it is a highly skilled technique, demanding an instinctive feeling and knowledge and particularly, an appreciation of what soil is and what its limitations are.

Just as the surgeon practices the technique of surgery over and over and over, in order that his work will not result in harmful effects to his patient, so must we recognize and admit that the technique of handling and farming the land must be skilled, in order that it will not

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bring about or invite the destruction of the substance that is so necessary to continued life.

Conservation, or soil conservation, is a manner of applying the techniques of farming or using the land. Soil conservation is by no means something new or something that has been evolved in a drafting room or an office, but it is a combination of theory plus practices and demonstrations that have existed and been worked out by people since mankind first started farming.

Soil conservation is an accepted, proven manner of handling the soil for the production of food in such a way that we can continue using it to grow food without causing its destruction. Soil conservation is a manner or method of using the land in such a way that the same amount of protection originally afforded by nature will still be effective.

When we terrace a hillside, converting it into a series of steps, we actually accomplish in purpose what we would do if it were possible to pick up a hilly piece of land in the palm of our hand and draw a straight edge across it, leveling all tilling surfaces. We terrace land because we know that water which runs slowly is not harmful, but that as the speed of water increases, its carrying power, or its capacity to carry away the soil, increases, many, many times. When we plant a cover crop in an orchard, we are accomplishing, in effect, the same thing that Nature would do with succeeding generations of grass or brush on the land. We are merely integrating Nature's own methods of protecting her soil along with our own methods of using the land to produce the specific products needed by us. That is the definition of conservation farming.

There is an old saying to the effect that familiarity breeds contempt, and this is reflected in a statement by a representative of another federal agency, who once said, "You fellows in the Soil Conservation Service have a tremendously difficult job of education, insofar as the general public is concerned, because there is not a person living who has not at one time or another been punished for tracking dirt into the house or had some other unpleasant experience with dirt, such as his mother discovering it behind his ears. On the other hand," he went on, "people think well of trees because they had Christmas trees when they were youngsters, and a tree provided shelter for the village smithy, and there were trees in Nottingham Forest. And so," said the representative of this other agency, "we have a great advantage."

My reply to that was that there were few people indeed who did not recall having been, at least once in their lives, hungry. Maybe it was after school when they came looking for bread and butter, and maybe it was some time when they were caught out away from home on a hunting or fishing trip and had to delay a meal for several hours. When we think of food we must think of soil.

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There was a great deal of truth in what this man said, but we know that there are such things as acquired tastes, and we know that habits of people can be changed both for good and for bad. Advertisers have put cigarettes in a high percentage of the purses of the modern generation of young women--and don't mistake me--I am not citing that as something good or bad--I am merely citing it.

A century ago there were very few toothbrushes used in this country and probably not so many bathtubs in existence. Education has revealed the need of these things to the people, and the people have responded. Today we have the tools, the implements, the knowledge, and the trained personnel ready and willing to go out and instruct this nation how to conserve its natural resources, not only of soil, but of forests, wildlife, and its water resources. Our techniques have been highly developed and have been tested throughout centuries--but the skill of a technician must be used before it can be of any great value.

We live in a great democracy, where the actions of the people are dictated and regulated by the people themselves. Conservation cannot be attained in this country as it is in other countries where dictators make a rule and enforce it by police. It cannot be enforced as it is in Germany, where a farmer is not allowed to sell his farm, but if he farms it improperly it may be taken away from him and sold by the state to some other farmer. We cannot enforce conservation in this country as they do in Japan, where the state dictates the practices to be used on the land and the crops to be grown on the land. This is a democracy. This is a land where our habits and our practices are dictated by and actually enforced by the people themselves, and no movement can hope to succeed, regardless of how worthy it is, unless it has the support of the people.

Today I am talking to a group of educators. Today I am talking to a group of professional specialists in imparting worthwhile information to the citizenry of this nation. Each and everyone of you has dedicated yourself to the task of imparting worthwhile knowledge to those under your instruction. No nation can be more firm or more lasting than the fertility of the soil that feeds its people. Many nations have undergone gradual decay and passed out of existence because they have failed to know or failed to heed the restrictions that Nature imposes when she gives the use of her land to mankind. In our own nation, thousands and thousands of farms have for a time produced their crops and for a time furnished food and shelter for our people, only to grow lean and poor, and because of declining productivity, driven the people from the land, never to return. Soil is a precious thing. Soil is fleeting, when improperly handled or when it is in the careless hands of the uninformed. Soil can be everlasting or it can be of relatively temporary nature, all depending upon the skill and appreciation of those who till it.

For the last few minutes I might have been reading to you from the foreword, or perhaps from the warning, of the first page of the Book of the Land--if there were such a book. Every educator, every loyal Ameri-

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can citizen, and every student who prides himself on being a student--to every one of them I recommend this Book of the Land. And, in order that they may not only appreciate and understand what the book has to say about trees, our wildlife, and our streams, I urge that they observe carefully, and consider deeply, what is said about the soil. This is knowledge that the farmer can use to increase his return from the land. This is knowledge that the loyal American can use to give substance to his loyalty. This is knowledge that every educator should have and should impart as a portion of his obligation to those whom he instructs and to those who must have food and to those who, as the future American citizens, are entitled by right of heritage to the same bountiful land and the same opportunity to live the full and normal lives that we have today.

For those of you who wish guidance in your reading of the Book of the Land, and for those of you who need help in reading the symbols that are so filled with meaning, we invite you to follow us into the fields and see with your own eyes and to ask us for the aids and literature that we have compiled in order that we may assist you in carrying this vital message to your students.

## OBSTACLES IN THE WAY OF BETTER NUTRITION

Charles J. Robinson, Professor of Chemistry, Pomona College

Relationships between the health of the pupil and his "educability" are obvious to all teachers, and several aspects of these relationships are to be discussed in the clinical sections of this ninth Annual Reading Conference. The fact that good diet is one of the chief factors in health is now generally accepted. An extensive body of knowledge has been accumulated about food requirements and the damaging results of deficiencies of various sorts. The value of hundreds of different food-stuffs in preventing or relieving such deficiencies is known. Our knowledge of nutritional factors is still far from complete, and much research work is still in progress in laboratories, hospitals and health centers, the results of which will doubtless extend our knowledge measurably in the next few years. But what we now know is enough to make a tremendous difference in the general level of public health if this knowledge can be effectively applied to help the millions of both children and adults who are inadequately nourished.

What I shall say will relate to the eating habits of all, rather than of children only, for school children generally eat what their parents eat; in fact, the parents do most of the selecting of foods for the children. Hence, improvements in the food habits of children will come mainly through attention to the family group.

It is very significant that estimates of the number of people who are below normal in health because of nutritional deficiencies have been rising astonishingly. In 1933, President Roosevelt spoke the much-quoted phrase, "one-third of our people are ill-fed, ill-clothed and ill-housed." At that time nutrition experts who made surveys of the dietary habits of cross-section representatives of the population reported one-third of the diets poor. It was well-known at that time that several serious diseases were caused by deficiencies: rickets, goiter, pellagra, scurvy, beri-beri, nutritional anemia, xerophthalmia. But the total number of people in the United States suffering from these diseases was not alarming. That was about the beginning of the new era in vitamin research. Up to that time, research with animals had been the chief source of information. The knowledge thus gained, plus the very important fact that synthetic vitamins were one by one becoming available in large quantity, made it feasible to undertake experiments with human beings, and make extensive clinical use of minerals and vitamins in concentrated form. The astounding result of this human experimentation has been to make it clear that not only are the above-mentioned severe diseases caused by nutritional deficiencies, but that a host of minor ailments, which for centuries have made people miserable and have puzzled the medical profession, also yield to increased intake of proteins, certain mineral elements, and the known vitamins. There are now fifteen of these, and several more are suspected and under investigation.

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In 1941, the Surgeon General of the United States Public Health Service believed that three-fourths of the people of the United States would be measurably more healthy if they ate the proper foods. A prominent English doctor in 1940 estimated that ninety per cent of the British people were not up to standard nutritionally. The list of minor ailments which may be caused by deficiencies includes the following: night blindness, sore eyes, indigestion, neuralgia, nervousness, mental depression, anxiety, lack of vigor, heart palpitations, constipation, lack of appetite, eyes sensitive to light, cataract of eyes, skin sores around the mouth, more general dermatitis and acne, dyspepsia, premature old age, bleeding gums, teeth loosening, flesh easily bruised, rheumatic pains, bones easily fractured, some forms of chronic diarrhea, premature gray hair, falling hair, anemias of several kinds, dropsical conditions, illnesses of pregnancy, and slow growth of children. It should be stated, however, that many of these ailments may at times be caused by other factors than food deficiencies.

All of these are definitely known as symptoms of deficiency of this, that, or the other nutritional factor. In addition, there is conclusive evidence that too low a level of various minerals and vitamins affects unfavorably colds, tuberculosis, cancer, all infectious diseases, and ulcers of the stomach and duodenum. In view of all this, it is not hard to believe that three-fourths of the people suffer more or less from nutritional deficiencies.

A program to promote health through better nutrition must be based on universal education, in terms which even sub-average citizens can understand. But it is already apparent that imparting information will not prevent malnutrition, just as Sunday School teaching does not stop sin entirely. Centuries of religious education have failed to bring about the universal adoption of the good moral life, and we have no reason to be very hopeful about the universal adoption of the good nutritional life. But it might be of some interest to take note of the obstacles which have appeared, obstacles of several sorts, foundationed on man's mental limitations, personality traits, prejudices, bad habits, social customs, and economic systems. Fortunately we have now reached the stage, in the Western world, where there is ample ability to produce enough food except when wars disturb normal production. Deficiencies in this country result from poor selection of foods, or bad economic conditions, not from lack of supplies of food.

The general public has received a great deal of hit-or-miss information about nutrition through popular newspaper columns, magazine articles, popular books, government bulletins, and advertising literature put out by manufacturers of food products and drug preparations. The latter is highly colored, of course, for the purpose of promoting sales of a certain product. Such hit-or-miss educational media have achieved hit-or-miss results. Most people know something about the subject, most of them have a good deal of misinformation, and very few have taken the pains to learn exact details about requirements and about the real val-

## Robinson 3

ues of the numerous food products. Acquisition of such exact knowledge requires more mental effort than most people are willing to expend on any subject. Nevertheless we do encounter some people who are applying nutritional knowledge intelligently and habitually to their own or the family dietary. The results as measured by the good health of the members of the family are usually conspicuous. On the other hand, we encounter many more people who are nutritional sinners because:

1. though trying, they do not know enough about the subject; or,
2. because they regard it as too troublesome to bother about; or
3. because foods are recommended which they do not like; or
4. because they let themselves be slaves of social customs regarding serving of refreshments and drinks; or
5. because they do not have enough income to buy the foods they need.

These nutritional sinners give the doctors much more patronage than they should; they enjoy many of the ailments listed above, including mental illnesses; they lack energy and ambition; they are not fully alive; they become prematurely aged. In short, they are not as good citizens as they might be, in school or out.

Numerous examples of salvation-seekers with inadequate knowledge of nutrition can be cited. A simple pattern for good diet has been much publicized by the food experts of the U. S. Bureau of Home Economics. It goes something like this:

Daily: 1 pint of milk for adults, 1 quart for children.  
1 helping of meat (cheap cuts for economy) or cheese.  
1 egg if possible; 3 a week if economy requires.  
1 serving of potatoes, white or sweet  
2 servings of other vegetables.  
2 servings of fruits.  
Whole wheat bread and whole grain cereal.  
starchy, sweet or fatty foods to satisfy hunger or provide an adequate number of calories.

A conscientious housewife following this pattern may serve the family corned beef, potato chips, canned corn, bleached lettuce, canned pears and stewed dried apples, all of which are woefully deficient in minerals and vitamins, but conform to the pattern. In contrast, a selection of lean pork, sweet potato, broccoli, tomatoes, oranges and apricots would be extremely rich in minerals and vitamins. The above pattern is probably about as good a device as can be found for helping Mrs. John Doe to better nutrition for the family, but it certainly is not an infallible guide for one who is not familiar with the values of each kind of food. The wise ones find it beneficial to serve as many as seven or eight kinds of fruits and vegetables; two of each is a minimum figure.

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Salads have been much stressed as desirable, especially by the newspaper dietitian-writers. But what constitutes a salad? and what makes it nutritionally valuable? Not long ago, I saw at a school cafeteria six kinds of salad offered. Each consisted of a leaf of bleached lettuce with a blurb of clear gelatine trembling on it. There were six colors of gelatine, hence six kinds of salad. The school dietitian failed to remember, apparently, that gelatine jelly is 98% water, that the gelatine itself is the most worthless of proteins, that bleached lettuce has almost no vitamin value, and is probably the poorest of vegetables. Eating such a salad was equivalent to little more than drinking half a glass of water.

A salad to be worth while must be made of vegetables or fruits selected for high nutritive value, and the quantities served must be generous. One small leaf is insignificant to a human being. A very small worm will eat a sizable leaf in an hour, and still be hungry. Valuable salads, and alluring too, are made from green leaves like romaine or water-cress, substantial vegetables like tomatoes, avocados, green stalks of celery and asparagus, generous chunks of carrots, substantial portions of fruits. If gelatine is used, it should be loaded to the gunwales with chopped fresh fruits or vegetables. Indigestible materials like endive should be left out.

The most serious lack of information among people who know something of nutrition is usually the failure to appreciate the quantitative aspect of adequacy in diet. For example, I need iron. Raisins have iron. So I eat a raisin every day. But I need 12 to 15 mg. of iron every day to be in the best of health, and to get that much, I must eat not only a generous amount of raisins, but several other iron-rich foods every day, such as an egg, a piece of lean meat, a generous helping of greens, some peas and several slices of whole wheat bread.

Or I need vitamin C. Tomatoes have vitamin C, so I drink a small glass of tomato juice every other day. But I need 75 mg. of vitamin C every day to be in the best of health, so I must eat a big potato, several stalks of celery, a couple of apples, in addition to the tomato juice. Or I can drink a whole tumbler full of orange juice every day and get about 100 mg. of C at one gulp.

So it is with every one of the major factors in nutrition. I need to have a repertoire of six to ten foods that are strong in each factor, so that I can eat generously of two or three of the list every day, and thus have a pleasing variety along with adequacy. Also I must know the worthless "duds" among the foods, those that have nothing. There is gelatine. Macaroni and spaghetti and noodles have only calories; they are all right for the very active people who need calories. White bread, cakes, confections, are in that class also. Bleached lettuce doesn't count. Fresh pears, fresh white peaches and fresh apples have only a small amount of vitamin C, not much else. If I eat large quantities of them, they count, but small quantities do not. The same is true of most

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berries and watermelon. But the yellow things like carrots, yellow peaches, apricots, yellow cantaloupe, are rich in vitamin A value, as are the green leaves and stalks. Fortunately there is a wide variety of foods good in flavor as well as in nutritive factors, so that in the America of to-day one need not be deprived of good flavor to get good nutrition.

May I cite briefly several other important facts of nutrition which people too often do not know, or about which they have been misinformed.

Why the emphasis on quantities of milk for everyone? First, because milk (and cheese) and bones are the only foods which we can eat in sufficient quantity to give us an adequate supply of calcium. Inadequate calcium leads to bad teeth, weak bones, rickets in children, spinal curvature, and to nervous disorders, such as insomnia. Herbivorous animals obtain ample supplies of calcium by eating much larger quantities of vegetable material than humans could possibly digest. If I don't drink milk, I should eat a little bone meal every day. It is being added to hog feeds, chicken feeds and baby foods, but has not yet been distributed to other consumers. Carnivorous animals and primitive people consider bones as food.

Milk is also our best source of vitamin B-2 or G or riboflavin. Lack of it produces skin sores, weak eyes, perhaps cataract, indigestion, and nervous disorders, perhaps falling hair. It is also a very important growth factor for children. Milk is also an excellent source of other vitamins, and of protein, but it is deficient in iron, in vitamin C and Vitamin D, so that a baby or adult living on milk alone develops serious illnesses.

There has been in the past a widely prevalent notion that only small quantities of meat, or none at all, should be consumed for optimum health. In the first decade of this century, through part-knowledge, some false conclusions were drawn which were widely publicized. It was stated that meat putrefies in our intestines and poisons us; that meat causes high blood pressure; that meat causes rheumatism by producing uric acid. The sour milk fad, the vegetarian fad, and the fad for meat substitutes developed because of these beliefs. All of these conclusions have been proved to be false or inconsequential, but the fads still linger in some quarters, and it is not unusual to meet people who fear to eat meat. We still have advertisements of patent medicines designed to destroy the "poison acids" produced in the body--acids, which to the biochemist are non-existent. Meat is now known to be our best source of protein, and it is also known that there are many people suffering from inadequate protein intake. General weakness, lack of vitality, dropsical conditions, swollen limbs, are sometimes due to inadequate protein. Much of the illness of pregnancy is corrected by eating more meat. Meat is also our best source of iron; meat eaters are seldom anemic. Meat is rich in the several B. vitamins; especially, lean pork is remarkably rich in vitamin B-1 or thiamine. Meat eaters do not develop any of the symptoms that lead ultimately to pellagra or beriberi, but those who eat little or no meat are apt to be on the ragged

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edge of vitamin deficiencies as well as anemia.

There has been much controversy for decades as to whether the standard white flour or whole wheat flour is best for health. The millers and bakers do not like whole wheat flour because it becomes rancid and perhaps wormy in a comparatively short period of storage. Housewives decided back in the 'seventies that they prefer the texture and color of white bread to that of brown bread, and they have stuck to that decision. Most people have developed strong preference for the flavor of white bread; a few are really over-sensitive to the irritating effects of the bran that is left in the whole wheat flour. But nutritional research demonstrated beyond a doubt that whole wheat flour or cereal is an excellent source of iron, phosphorus, vitamin B-1, niacin, riboflavin, several other B vitamins, and vitamin E. White flour has very little of these factors left in it; in fact it is mostly a calorie food. Through the efforts of the Committee on Nutrition of the National Defense Commission, millers began early in 1941 to add to white flour about the same amount of thiamine and niacin that is lost in the milling process. Some have added also iron and/or calcium. The "enriched flour" is an appeaser's compromise. It is obvious that it is a very poor substitute for whole wheat. It is unfortunate that so many people have been misinformed on this point. However, the lost nutrients can be obtained from other foods if proper selection is made.

Another bit of information that few people seem to have, and that is one of the most important points in adequate nutrition is the rule that the smaller the amount of food which a person eats, the more important it is that foods be selected for their high mineral, vitamin and protein content. A very active person who is eating three thousand to four thousand calories per day is fairly certain to obtain enough of the essential factors without paying close attention to his or her selections. The inactive person, the "light eater", who may need only fifteen hundred to two thousand calories because of low energy expenditure, needs almost as much protein and vitamins and minerals as the very active person, but it is a mathematical fact that he or she can acquire proper amounts of these factors only by choosing exclusively the foods which are rich in these factors. There is no room in the diet of such people for white bread, cakes, confections, sugary soft drinks or alcoholic drinks, or salad dressings. This is the reason why older people who have become inactive so often decline in health, become morbid and depressed, rapidly develop senility. It also frequently happens to young people, even school children, who have developed inactive habits for one reason or another. Beth March probably died of nutritional deficiencies. The sale of soft drinks, ice cream, cakes, candy bars and other confections in or near schools is a menace to the child who is a light eater. The average candy bar, for example, has about 400 calories. The small bottle of soft drink has 120 calories. The ice cream small cup has 250 calories, and not enough minerals and vitamins to balance its high calories. These quantities of calories constitute so large a proportion of the light eater's daily intake that it is impossible

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to get enough of the necessary factors, but the very active children may eat enough other foods to offset these sugar orgies.

So much for the lack-of-information obstacle. Those who regard attention to good nutrition as too troublesome are much more hardened sinners than the lack-of-information group. They are mostly in the "It can't happen here" class, the happy-go-lucky folk who feel well, and are enjoying life and see no reason to bother about preserving a health that seems to be taking care of itself. Some of them choose good diets by chance. Others are awakened with a jolt when serious breaks in health occur. Some of the things that can and do happen in real life: Vitamin A deficiency gives infections a chance—it may be arthritis, sinus infections, tuberculosis; almost all newly discovered cases of tuberculosis are very deficient in vitamin A. Deficiencies in vitamin B-1 and the other B vitamins give a chance for neuritis, palpitations of the heart, nervous symptoms, falling hair, gray hair. Chronic constipation is very common. So are rheumatic pains and just plain lack of pep.

When young folks become parents, they usually begin to learn about nutrition through the baby's doctor, and solicitude for the baby's welfare accomplishes wonders. This, and the personal shock of having deficiencies occur to themselves or to near ones, are the only effective means I have observed for reforming the indifferent sinners.

Many persons have tightly locked mental compartments labeled "Foods that I like" and "Foods that I do not like". The persistent habit of eating certain foods, refusing to eat others, and resisting change in food habits seems to be a deep seated trait in human nature, observed in nations, families and individuals. The rice-eating habit of the orientals persists among the transplanted orientals, even though it is now known that rice is the poorest of the grains. The western Europeans have been wheat-eaters for thousands of years, and we persist in that habit. Among families, there are those who drink milk and those who do not; those who love pies and those who hate pies; those who eat heartily of vegetables and those who do not like vegetables. In the same family will be found individuals who go through life with certain peculiar dislikes; for example, one of my brothers would not eat potatoes nor drink milk. I am now convinced that the ill health and the bad teeth which afflicted him were due to deficiencies.

The most common dislikes that lead to nutritional trouble seem to be for whole wheat bread, for milk and for vegetables. Dislike of whole wheat bread is probably the least serious, but substitution of whole wheat for white flour in all products using flour, and in general, substitution of whole grains for the emasculated products which the manufacturers prepare for us would probably relieve much of the chronic constipation, anemia and neuritis which are prevalent, and might make for less sterility. The number of married couples who remain childless is surprisingly large.

Although the per capita consumption of milk has doubled since 1900,

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there are still many who would be in better health if they used more milk. Habitual drinkers of alcoholic beverages and of much coffee usually dislike milk. Results commonly attributed to the alcohol and to excessive caffeine may very well be in part the results of deficiencies in vitamins B-1 and B-2 and calcium, all of which milk supplies liberally. We used to be told that cirrhosis of the liver, or hobnailed liver, was the result of alcoholism. Indirectly it usually is, but it has been shown that riboflavin and other factors in abundance will cure it. The young mother who does not like milk will probably find her teeth coming out, as grandmother's did; and may also find that her baby has poorly developed bones, perhaps rickets. Dr. Sherman, perhaps the best known authority in this country on nutrition, believes that deficiencies of calcium and riboflavin, together with vitamin A, are the most active factors in bringing on premature old age. That might prove to be an effective argument with middle aged people who dislike milk.

Dislike of vegetables is probably more prevalent among men than among women. The most extreme result of such dislike that I have heard of is the case of the professor in a well-known university, who stubbornly refused to eat vegetables or fruits, and was very unwell. At the hospital, his case was diagnosed as scurvy. More frequently the diet low in fruits and vegetables has enough vitamin C to prevent cut-and-out scurvy, but what is called sub-clinical scurvy develops, with rheumatic pains, bleeding gums, anemia, and general misery. There are apt to be other deficiencies besides low vitamin C, especially that of vitamin A, resulting in night blindness, chronic colds and sinus infections, perhaps tuberculosis, and skin troubles.

Methods of preparing vegetables for the table are especially important because of the frequency of the dislike complex. Vegetables should be made appetizing by flavorings and fats, and should be sufficiently cooked, if cooked at all, to remove the raw taste to which many people object. The columnist Henry McLemore recently voiced a complaint on this point. There has been so much said about the destruction of vitamins by cooking that over-zealous vitamin conservers have done to the cooking of vegetables what modern styles have done to the bathing suits. The process might be called super-abbreviation. The rate of destruction of vitamins by cooking has been much studied. The only one destroyed very rapidly, so far as known, is folic acid; but what its usefulness is in human nutrition is not known. The well-known vitamins are not destroyed faster than about 10% per hour by ordinary cooking, unless unduly exposed to air. Hence there is no reason why vegetables should not be cooked thoroughly, although it is not advisable to cook them longer than needed for softening. Willingness to like vegetables will be made much easier by tactful aids from the cook, such as decent length of cooking, some bacon or butter, and other aids to flavor. Much more serious than over-cooking is the use of unnecessary water in cooking and the discarding of this water. One-half to three-fourths of the minerals and vitamins of vegetables are often lost by throwing away large volumes of water in which the food was cooked.

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Several specific points relating to vegetables need to be emphasized. Green leaves, not bleached, have everything nutritionally except calories, and are especially high in vitamin A content. An important problem for the family or school dietitian is to acquire a substantial repertoire of greens, and varied methods of preparing and serving them. Fortunately the gardeners have already responded to the demand, and now in most markets we can find spinach, beet tops, mustard greens, chard, broccoli, romaine, water-cress, and sometimes kale and dandelion greens. A good substantial serving of greens three times a week should not become monotonous with such variety. Greens are an excellent substitute for liver, in case you don't like liver. But there may be those who like neither greens nor liver.

White potatoes are extremely valuable, especially when and where canned goods and refrigerated goods are not available, because they keep well through the winter, and have a good supply of vitamin C, thiamine and others of the B group. The introduction of the white potato into Europe three or four hundred years ago was a tremendous factor in lowering the death-rate and raising the general level of health there, for previously the inhabitants had had no food containing vitamin C which could be kept through the winter, and scurvy annually killed vast numbers. Now again in the desolation of war, the potato is a major factor in saving life. It is the back-bone of Germany's food program. It grows everywhere, and the yield per acre may be very large. In subjugated countries, if seed potatoes can be saved, the potato crop will be the chief hope of survival.

In this country, there seems to be a decline in the popularity of this food, perhaps because so many other vegetables are now available. Where used, the servings are frequently very small. There is some tendency to substitute macaroni and spaghetti for potatoes. These favorite foods of the Italians are merely another form of white flour, and are not properly a substitute for potatoes. If restrictions on canning vegetables become severe here, potatoes may be used in larger quantities as a substitute for many other vegetables. Woe to those who do not like potatoes.

Sweet potatoes and yams are even more valuable than white potatoes because they have a very high content of vitamin A in addition to C and the B vitamins, but they do not keep as well through the winter. Carrots have been lauded for their high A content: the sweet potato is just as good. Those who do not like carrots can find more tasty substitutes in apricots, yellow cantaloupes and muskmelons.

I am convinced that when an individual dislikes foods which the majority of people like, it is because of a psychological quirk analogous to the inferiority complex and other fixations. Its origin is obscure and irrational, but attempts to overcome it by direct attack merely aggravate the situation. The key to conquering dislikes lies, I believe, in the principle that a person can successfully will to like

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those foods which he is convinced are beneficial for him. A good many people have testified that the principle works. It did in my own case. I did not like whole wheat bread, but became convinced some years ago that it was important to learn to like it. Now I prefer it decidedly to white bread. There were a good many kinds of vegetables that I did not like, but thanks to a cook who is skilful in producing good flavors in vegetables, the principle has been successful in that instance also. Others have told me that they learned to like whole wheat bread, milk and vegetables by eating them with conviction that they were benefited by these foods.

Children can be persuaded to act on this principle if approached tactfully. The entire advertising campaign of a certain worthless breakfast cereal was based on it. Prominent athletes were paid to say, at least by inference, that they owed their prowess to this cereal. Each athlete's picture was in turn displayed on the cartons, and every sentence printed was an appeal to the boy's innate desire to become strong and vigorous and masterful. Presumably it worked well; sales were marvelous.

If you try this principle on someone, I hope you will do it in a worthy cause, and be sure that the food which is to be liked for its beneficial effect is really worth while. I felt sorry for two boys who had been driven to eat cream of wheat and lettuce leaves.

Another obstacle to better nutrition: Social customs with regard to refreshments served at receptions, teas, and parties do not appear to be keeping pace with the modern knowledge of nutrition. The refreshments are almost certain to consist of sweet drinks, ice cream, confections, cakes, perhaps sandwiches. It was previously mentioned that most of us are not very active, and therefore do not need a very large number of calories. This makes it important that most of our foods should be selected for high value in minerals and vitamins. The high-calorie tidbits served as refreshments seriously upset the program for the day's adequate intake of necessary factors, and if this happens fairly frequently, we are either deficient or over-caloried. The sensible things to serve are plain fruits and unsweetened fruit juices, except when the guests are really calorie hungry.

The person who is adding more fruits and vegetables and milk to his diet must take something out. It is the cakes and confections which should come out. It has been estimated that when everybody is properly nourished in this country, the production of fruits and vegetables will be doubled, the production of milk will be increased about 30 % and the production of bakery goods and candies will be very much cut down. There are some who derive much pleasure from eating these things, and suffer pangs of regret at the mere mention of abstaining from them. They need not fear that they will suffer actually. It is the common experience that after establishing the diet on a high level, or the optimum, of the important vitamins and minerals and protein, the appetite for sweets is

no longer keen.

Inevitably a low family income is a very serious obstacle to good nutrition, but not necessarily an insurmountable one. In 1936, the average family in the United States was apparently spending about 25 cents per person per day for food. Those who knew foods thoroughly and had the will to like the healthful foods could at that time select an excellent ration for 15 or 16 cents per day. If skilfully cooked and flavored, such a ration would not be too monotonous to endure, but there would not be much meat in it. But there was a considerable part of the population, perhaps 15 to 20%, which could not spend even 15 cents per person per day for food. At the present time the average income is much higher, and there are few unemployed, but the cost of foods has risen, so that there is even now a considerable number of families who can scarcely provide themselves with needed food.

The condition of the low income group, nutritionally, is made much worse by the fact that a very large proportion of them know almost nothing about nutrition. Thus the combination of low income and ignorance of food values and nutritional needs makes a situation which is certainly not going to be corrected in a year or a decade. Several governmental agencies have been carrying on educational programs through relief activities, and these have undoubtedly had some effect. The most effective educational program of which I have heard, however, has been carried on among a few hundred families in New York City. Expert dietitians with the necessary personal qualifications made contacts with families, visited each family daily, showed the mother how to plan and buy wisely and economically, and how to prepare the food properly. This was kept up for about six months, the mother becoming more and more independent of the teacher as she learned. The reports of this work were that all of the families showed a remarkable improvement in health and well-being and optimistic outlook, that their food was costing rather less than before, and that all of the persons concerned liked the new type of diet much better than the old after they overcame the first resentment at change. The improved morale of these people was especially emphasized in the report.

There are about 30,000,000 families in the United States. Probably about 20,000,000 of these families need this type of instruction more or less. Whether it can be carried out extensively is highly problematical.

In conclusion, may I recapitulate the factors which are preventing the present knowledge of nutritional science and of foods from being effectively applied to raise the general level of health in the United States.

First: In spite of much popular education, which has been carried on in haphazard fashion, there are comparatively few persons who have enough exact knowledge of nutritional requirements, deficiency symptoms and food values to select those foods which will supply themselves

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and their families with an optimum diet.

Second: There are many persons who regard the new patterns of diet as too troublesome for adoption, and unnecessary for their well-being. They do not face realistically the established fact that a considerable proportion of physical, mental and nervous breakdowns are preventable by good diet.

Third: There are many persons who refuse to adopt the new patterns of diet because of their dislikes for certain foods or certain classes of foods. There is good ground for believing that if a person wills to like a food that is beneficial for him, he will in a comparatively short time develop a real liking for that food.

Fourth: The social custom of serving sweetened beverages, confections, and other high-calorie low-vitamin foods seriously disturbs the optimum dietary program, especially among people who do not require a high caloric intake because of sedentary habits.

Fifth: Low income makes it difficult to purchase the foods which are needed for the optimum dietary pattern, and the difficulty is aggravated by the fact that few of the people in the low income range have even average knowledge of food values and good diet. Some small scale home education efforts have shown that this situation can be ameliorated with marked improvement in health.

Perhaps more awareness of these obstacles may help to annihilate them, and clear the way for more rapid progress in the march toward better health through better dietary habits.

## HOW I TEACH READING

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Few teachers are capable of conveying to others the spirit or essence of the work of a class, even by a detailed description of its activities. Such a description can give no idea of the changes which have taken place in pupils and teacher as a result of their work together, nor of the mental and emotional processes by which those changes occurred. In short, a description can present only the outward and visible signs of a series of socio-psychological experiences, some of which are shared by all members of the group, and some of which are wholly individual. In fact, the teacher himself is often unaware of the things he has taught or the attitudes he has created in a child.

There are several reasons for the incomplete picture which must result from any purely expository statement concerning a semester's work. They are obvious to all who have classroom experience.

First, no teaching plan which is worthy of the name is ever fully realized in its original form, since the teacher alters it from day to day—even from hour to hour—to make it conform to the needs of a specific child or group. Therefore, mere presentation of a study outline is neither accurate nor useful to a teacher who is interested in another teacher's methods.

Second, a device or procedure may be highly effective under one set of circumstances and either valueless or actually harmful under another. As a result, an account of the use of any teaching technique must, to be valuable to other teachers, be accompanied by a description of the conditions under which it is most apt to function well, and this in turn must lead to an analysis of the composition of the particular group in which the method was successfully used. Such an analysis takes a long time.

A third element which causes descriptions of classes to be on the whole unsatisfactory is the fact that it is the task of the creative writer—the artist—to portray intangible essentials: the relationships between a teacher and his class, between him and individual students, and among the children themselves. A teacher can feel the atmosphere of a classroom, but he often is at a loss to make outsiders feel it. That atmosphere may be tense and nervous, or relaxed and friendly. The children may be working under the compulsion of a system of rewards and punishments, or because the teacher has been able to awaken in them the desire to learn. These factors are difficult to analyze, especially by a person who has himself been involved in the situation. Yet on them perhaps more than on anything else depends the success or failure of a teacher's work.

Finally, the most honest of teachers, in attempting to describe

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his own work, cannot avoid emphasizing his successes and minimizing his failures. Nebulous ideas which were but imperfectly executed, or perhaps were not tried at all, appear as full-fledged, carefully constructed teaching devices. Disciplinary problems seem to be non-existent; or, better still, they apparently vanish under the inspired guidance of the autobiographical teacher. A neophyte in the teaching ranks may be pardoned for feeling, as he listens to the tale of the smooth, happy, inevitable progress of a group of children toward a goal set by the speaker, that he is being addressed by one who possesses powers not granted to ordinary mortals.

It is with an acute awareness of the difficulties so briefly set forth above that this sketch of one teacher's attempts to teach reading to junior high school boys and girls is presented.

The teacher's first task in any class is to get as much information as possible about his pupils, and at the same time to gain their confidence and cooperation. It is not always easy to accomplish both these things at once, because too much eagerness to obtain data may impress children as being an unwarranted intrusion upon their personalities, and may create resentment and mistrust which are hard to overcome. The opening moves, therefore, must appear casual and unstudied.

The approach to a class which is wholly unselected so far as mental ability is concerned will, of course, be different from that to a group which is fairly homogeneous. Since many schools now have their academic work organized on the basis of ability grouping, it may be worth considering briefly both the introductory and the teaching methods which may be effective in "high" and in "low" groups. In an unsegregated class, the teacher must feel his way even more carefully than in the classes about to be considered.

A class of high ability may be taken into the teacher's confidence on the opening day of the semester. The subject-matter of the course may be briefly sketched; the teacher may outline several different ways in which the material may be handled, and may then ask for opinion and advice as to the best method to follow. If the discussion is skillfully handled by the teacher, the class is apt to arrive at two important conclusions. The first is that good work requires good tools, first among which is the ability to read rapidly and with high comprehension. The second is that it would be a good plan to have some objective tests to enable the students to see for themselves whether or not they possess the skills necessary to successful work. The teacher suggests that there is no point in wasting time on a repetition of familiar material---an idea which intelligent pupils greet with enthusiasm. This thought increases the desirability of tests, which will help to sift the known from the unknown. The teacher should now be ready, with the eager support of his class, to embark upon whatever testing program the facilities of his school make possible.

The group which consists of children either of low mental ability

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or of reading grade placement far below normal cannot, obviously, be approached in the manner suggested above. The teacher of such a class has before him at least a few pupils (sometimes a majority of the class) who have acquired, by the time they reach junior high school, a long, steady history of failure in school work. Many of them hate, genuinely and deeply, everything connected with education. Others have learned that they suffer least when they succeed in making their teachers forget their existence, so they have retired to daydream in shells of stupidity and indifference. The school's most serious disciplinary problems are apt to be in such a class, since adolescents who fail to gain recognition in socially desirable ways may try—often with startling success—to get it by flagrant violations of the rules of conduct. The normal members of the class have rarely had the chance to develop to the full their limited abilities.

How can the teacher of such a group break down the barriers between himself and such children, and establish friendly relations with them? How can he put them into a frame of mind which will make test results fairly valid, and which will later make it possible to remedy some of the weaknesses of the individuals in the class?

There is, of course, no formula. Even the most gifted teacher, when he surveys his work with such a group at term's end, must admit some almost complete failures, and some far-from complete cures. But, in compensation, he will also find accomplishments of which to be proud; accomplishments not only in improved reading grade placements, but, what is far more important, in changed attitudes, improved behavior, and more normal outlook on the part of many of his pupils.

The beginning should be slow. During the first week that such a class meets, almost no "teaching", in any of the conventional meanings of that word, will be done. The time should be devoted to a slow process of getting acquainted and of relieving as much as possible the tension which always exists in any newly gathered group which is facing a teacher who is a stranger. In a low-ability group, this tension is intensified by the factors of background and personality which have already been mentioned.

A simple device which can be used on the opening day to put most of the children at ease is that of assigning small duties dealing with the care of the classroom to all of them; to all, that is, with the important exception of those who seem to shrink from such tasks. Physical activity lessens strain. The teacher learns a few names and notes outstandingly good or bad behavior. There should be something for every one to do, even though it be nothing more than the sorting of books by their color, or the stacking of magazines according to size.

Nothing is said about learning or about assignments on this first day. Near the end of the period, the teacher asks for simple items of information in writing: name, address, favorite school subject, the

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number of children in the family.

Before he meets his class for the second time, the teacher should, if possible, obtain from the office of the counselor all the information available about his students. If the exigencies of the opening days make it necessary to postpone the gathering of this information, the teacher should not let himself forget to do it as soon as possible. He should have at least the age, an IQ, a reading grade placement, and a record of grades, promotions, and failures for each child. In some cases he will be able to get personal data. The medical history, with emphasis on vision, hearing, and nutrition, should come from the counselor or health coordinator.

The second class meeting can be divided between work on a simple questionnaire (perhaps modelled upon the excellent one in Dr. Holland Roberts' silver "Let's Read!") and the reading by the teacher of a simple story.

The time for giving a standardized reading test must depend upon the speed with which a desirable atmosphere is created. Often the class is ready by Wednesday or Thursday of the first week. The children should be assured before the test is administered that no dire results will follow if they do not "pass". It must be remembered that these low-ability children have failed most of the tests they have taken in school, and that consequently they are apt to be emotionally paralyzed by the prospect of another one. For the same reason, the timing of the test should be done inconspicuously.

Both classes—"high" and "low"—have now arrived at the same stage; namely, the teacher has established a preliminary acquaintance and has given an objective test. From this point on, the methods applicable to the two types of groups are so different in detail and in the materials used (though perhaps not in principle) that each requires entirely separate treatment. The "bright" class will be considered first.

Intelligent students will, as a rule, demand to be shown their test scores, and will be most interested in an explanation of their meaning. Several days can usually be profitably spent in a discussion of the papers. Pupils will compare scores, ask questions about the construction of the test, and offer excuses for their shortcomings if they find themselves below class average. Some of them will go to the teacher privately and ask for help before class work has actually begun. It need not be added that the teacher should be fully prepared to answer all the questions which arise; children can be very unkind critics.

During these discussions, the teacher can point out that one method of analyzing individual weaknesses is to learn about the past educational history of each student. This leads to two projects; the familiar autobiographical theme or essay (an outline suggested by the teacher can usually prevent this from wandering into the "How I Got Poison

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Ivy at a Picnic" type of thing), and the reading questionnaire. Several such questionnaires are available; Dr. Roberts' excellent one has already been mentioned. If no prepared sets of questions can be obtained, the teacher will have little difficulty in making his own. The emphasis should be on a fairly detailed statement of past reading and related experiences, with a few questions on individual interests and abilities and on vocational plans. These questionnaires should be kept in confidence by the teacher, and used in subsequent individual conferences.

It is hardly necessary to say that the same information should be obtained from the counselor's office concerning pupils in a high-ability group as concerning others, although it is probable that there are fewer serious physical defects among intelligent students than among less gifted ones.

It is impossible to outline an entire semester's procedure for improving the reading performance of high-ability pupils, because so much depends upon the nature of the course in which the work is done, the rigidity of the subject-matter requirements, and the library and other facilities which are available. However, several types of work can be carried on in almost any English or Social Living class.

Training in careful, intensive, detailed reading—the kind which is sometimes called "work-type" reading—can be given regardless of the subject-matter of a course. Studies show that most bright children of junior high school age read rapidly, with good general comprehension, but very superficially. They badly need specific drill in the undramatic but essential reading required of the scientist, the scholar, and the workman who may come to grief if he does not follow directions accurately.

If the class is a double-period English-social studies combination, the social studies subject-matter will supply ample material for such drill. A smaller quantity of reading, with fewer and shorter written and oral reports should be assigned than are customarily given to a rapidly moving class. The voluminous notebook which owes so much to the Encyclopedia Britannica and the National Geographic Magazine should be abandoned in favor of a modest sheaf of papers which the child himself has written on the basis of careful, detailed reading and class discussion. The results may be less than perfect as literature or as history, but they will show that the child has been learning an important skill, and they may instil some sense of the ethical aspects of presenting some scholar's work under one's own name.

The teacher should encourage the constant use of the dictionary, since bright students are prone to guess at word meanings. Five-minute quizzes on the meanings of the words in an assigned bit of reading are very effective, particularly if the papers are corrected by the pupils themselves. The study of word derivations and relationships is both profitable and interesting to alert children. If the teacher finds

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as is highly probable, that his students do not like to consult a dictionary because they have but a rudimentary knowledge of how to use it, he should give a few lessons on dictionary technique. Library technique may be included if this seems necessary.

The emphasis which we are now placing on the study of geography gives an excellent opportunity for the practice of this "working" type of reading. A child sees readily the difficulties in which a navigator may find himself if he reads carelessly. "Lat." and "Long." are quite different. Preparations for a two-hundred-mile air journey would be decidedly inadequate for one with an extra zero on its mileage.

In single-period English classes, material for intensive reading can come either from the regular textbooks of the course or may be brought in by students from their other classes. Most of them will probably be studying mathematics, science, or a foreign language. In all these fields, the need for accurate reading is not hard to demonstrate. In many cases, children will report improvement in the quality of their work outside their English classes soon after they begin to apply their new skills to their assignments.

If it is desirable to have specialized practice in intensive reading, a book in the reading field can be used. It is no longer necessary, as it was a few years ago, to describe and laud the sparse handful of such books, because there is now a large number of texts, on all grade levels, in which all kinds of drills and teaching suggestions are given in full detail. Careful study of these books is rewarding to the reading teacher.

The second type of reading improvement needed by most bright junior high school pupils may be called enrichment. Referring again to studies which have been made concerning the reading habits and tastes of children, we learn two rather disturbing things. One is that children of superior ability like to read books which are far below the level, both in vocabulary and content, which they are capable of understanding and appreciating. The other is that these children tend to do what many adults, unfortunately, also do; they get into a blind alley. They limit their reading to one very narrow field, upon which they have in most cases stumbled by pure accident, and within which they make little discrimination as to quality. Of course, these aspects of reading are most pronounced among those children who get no cultural guidance at home, but there is apparently no group in which they do not exist.

We teachers clearly have a serious obligation toward intelligent children in guiding them toward the maximum development of their mental abilities. This is one of the places in our educational program at which we can make a direct contribution to the world of tomorrow. It is trite to say that the generation now in school must face, in its maturity, problems of appalling complexity. Certainly that generation will need the services of its most intelligent members. These leaders

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must be equipped not only with the scientific knowledge which the schools are so effectively giving them, but with the wisdom and humanitarianism which acquaintance with the thoughts, observations, and analyses of the world's best minds helps to produce. We are now seeing the results of scientific skill uncontrolled and undirected by ethical considerations and unconcerned about those aspects of human life which we call civilization. When we teach children to read widely, deeply, and discriminately, we are not only contributing to the enrichment of individual personalities, but we are also performing a task which is patriotic in the best sense of that word.

Several methods for encouraging increasingly mature reading suggest themselves. A carefully selected classroom library gives the teacher an opportunity to present books which children might not themselves select. In choosing books for this library, the teacher should consult the questionnaires and autobiographies which he obtained during the first week of the semester and should try to have all the major interests of the group represented.

A word of caution may not be amiss here. All of us have a tendency to feel that the kinds of books we read for our personal satisfaction are the kinds that everyone should read. The devotee of biography cannot understand the tastes of the reader of fiction, while the student of politics has difficulty in seeing why some people read poetry. We must not let these personal limitations color the suggestions we make to our pupils as to their reading. We must be concerned only with leading them to the best within the fields in which they are already interested; with showing them that other areas exist, and with introducing them into those areas; and with teaching them those rudiments of criticism which will enable them to distinguish, with increasing skill, good writing from bad in any field.

In addition to having books available, displays of the jackets of new books help to stimulate interest. Most school librarians are more than willing to furnish such displays.

At least once a week, the teacher can profitably spend a half hour in "advertising" several books to the class. A brief description of the nature of a book, some facts about its author, and perhaps the reading of several paragraphs from it, will usually cause a stampede in its direction.

Pupils, too, should be encouraged to give brief, impromptu reviews of books which they have enjoyed. These accounts may lack the organization of the more formal book report (which also has a place in the reading program), but they are valuable both to the reviewer and to his classmates, who usually want to read the books their fellows praise.

Unless children come from cultured homes, they are usually wholly unaware of the existence of professional book reviewing and criticism. Newspaper reviews, advance notices sent by book clubs, and the announcement sheets which some circulating libraries prepare for their patrons

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can serve as introductions to this field. Sometimes a class is fortunate in meeting at a time when one of the reviews presented by public libraries can be heard by radio. Much of this material has little subtlety, which makes it all the more suitable for newcomers to the field.

Some classes of the type now under discussion can profit by simple lessons in appraisal and analysis of books. Motion pictures often make a good basis for such lessons. Why is one musical comedy good while another with an almost identical plot is bad? What makes one "picture" interesting and another boring? Is it more interesting to see or read a story the end of which is easy to predict, or one which keeps the reader in suspense? What do we mean by "plot"?

Not only can such questions be profitably raised and discussed, but even the beginnings of character analysis can be introduced. Again the motion picture is useful. Most children recognize the typed actor, who plays the same character under a different name in film after film. He can furnish the basis for interesting discussion. How far such discussion can go depends, of course, on teacher and class.

All this work must be carried on informally, with no apparent object, so far as pupils are concerned. If it is to succeed, it must bear no resemblance to the painful "plot analysis", with its drawing of diagrams and its attempts to locate the page and paragraph in which the crisis occurs, to which former generations of English students were subjected. Such activity can best be left to the English major in college. If the teacher constantly keeps in mind his objective, which is to start his students on the path of intelligent, critical enjoyment of reading, he will have no difficulty in avoiding the pitfalls of over-formalization.

Since so much of the well-informed citizen's time must be spent in reading newspapers and magazines, it is well to teach children how to select and use periodicals.

First, they should learn something more than "newspaper" films teach them about the preparation and organization of a newspaper. They are interested in learning how news is gathered and transmitted; in the difference between news columns and editorial pages; in the purpose which special features and departments serve. Then, they might well learn, on a level which they can understand, of the ownership and management of newspapers, and of the conflicting policies which they may have on local and national matters. Pupils should be encouraged to read at least two newspapers, to compare them and to try to discover their attitudes on current issues. This, properly speaking is education for citizenship, and not reading improvement. Yet who would dare say that the schools are doing all they must for democracy if they teach love of pure literature and ignore the type of reading which is the most widely done in the nation and which still, despite its recent decline, has a tremendous influence on voters?

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There seems to be no end of new magazines, nor of the disappearance of merging of old ones. An individual's outlook is narrowed if he reads only two or three magazines just as it is if he confines himself to one type of book. The teacher can help his students to pick from the newsstands those magazines which best meet their needs. He will probably learn a great deal himself in the process. He can also help to undermine the hold which the so-called "comic" magazines have on juvenile readers by applying to them some of the principles of criticism mentioned above, well mixed with ridicule. As in the case of books, displays of magazines are a great teaching aid. It is surprising to see how quickly many children turn to magazines, and even to books, which are primarily adult in their appeal, once they become aware of their existence.

One closing suggestion is presented here rather apologetically. It is this: If people are to be encouraged to read, they must be given time and a favorable environment. Few homes in our crowded cities offer peaceful spots for reading. Therefore the schools must offer them. The room should not only be supplied with books, newspapers, and magazines, but it must be properly lighted. It should be as attractive as a school-room can be made. Finally, reading time should not be accompanied by a monologue from the teacher. If he must use such time for individual conferences, let him hold them in whispers in a far corner of the room, or in the hall. Never should a teacher break into a child's reading with a bright "Isn't that an interesting book!" Let him correct papers, or plan work, or read himself; but let him leave the children alone while they are reading!

The suggestions which have been given above are obviously incomplete. They merely sketch the two major needs of bright children: training in careful, intensive reading and enrichment of general reading. A few of the many ways in which these needs may be met are outlined. All teachers will develop their own favorite devices. Procedures which succeed in one class may fail in another. If a teacher knows his group and sees his goal clearly, he will be able to prepare his own lesson plans far more effectively than anyone else can do it for him.

We now turn to the other type of class--that which is composed of children who cannot read well. Some of them are of low mental ability; others have low reading grade placements for physical, educational, or emotional reasons. Nothing was said about motivation in the discussion of the reading problems of intelligent children, because in most cases they already love to read, and their interest must be merely guided. Among low-ability groups, on the contrary, motivation presents the major problem. It will be seen that most of the techniques to be described below have as their object the rousing of a desire in each child to read.

It has already been pointed out that the utmost care must be taken to put these maladjusted children at ease. Their first assignments,

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after the testing is over, should be of a kind which most of them can do easily and successfully. Simple written word drills, such as some of those in "Improving Your Reading" or "More Adventures" make a good beginning. These require little thought, and all but total non-readers can do them readily. There should be no class discussion of these exercises at this stage, lest the children who have made mistakes be discouraged. The results should be recorded for future use, however, on the individual record cards the use of which will be described below.

The span of attention of low groups is short, so they should never be expected to do the same kind of work for a whole period. After a few minutes of written work (enough time should be given to enable everyone to complete at least one short exercise) books should be distributed, and the teacher should read the opening pages of a story aloud.

The choice of this first book is very important. It must be simple enough for most of the class to read, yet its story must be sufficiently mature to hold their interest. Ettie Lee's adaptation of Hugo's "Les Miserables" is an excellent example of this type of book.

In addition to this book, a carefully selected classroom library should be at the disposal of the children. This "library" will be very different from that provided for the high ability children. It must contain very many short books, copiously illustrated. The counters of F. W. Woolworth Co. and its competitors furnish some good material. Print should be large, and binding cheerful. Adventure and mechanics for boys, love for girls--these should be the chief subjects. A few fairy tales may also be included.

For about two weeks, the class should work on written exercises and on silent reading while the teacher devotes himself to one of his most important tasks: individual interviews with each child. These interviews perhaps deserve full description.

The purpose of the interview, presumably, is to hear the pupils read aloud. A book of simple short stories furnishes the material unless the child prefers to continue the book he is reading to himself. Unless a pupil is a non-reader or is very nervous, he should read about a page, with no help from the teacher unless he comes to a word which he does not even attempt to pronounce. During the reading, the teacher tries to determine, from the child's clothing, mannerisms, pronunciation, and attitude, something of his background and personality. Speech defects are noted, to be reported to the speech correction teacher or school doctor.

Regardless of the actual quality of the performance, this first reading should be received with enthusiasm by the teacher. If the child is talkative, some of his reading and other problems can be discovered and suggestions made at once. However, this should not be pressed.

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After the student returns to his seat, and before the next one is summoned, the teacher writes an informal description of the reading he has just heard and of any pertinent points he may have noticed. Here are two typical notations taken from school records.

George. Slow, laborious. Spells out each word. Language handicap--probably Italian. Neatly dressed; well fed. Apparently understands what he reads, but the amount of work involved does not make it seem worth the trouble to him.

Genevieve. Rapid, self-confident, extremely inaccurate reading. Misreads badly--"declare" for "decide", etc. Is sure she is an excellent reader, and claims to read a great deal. Boy-crazy. Pretty; well-dressed. Emotionally unstable.

Such notations obviously have no claim to scientific accuracy, but they have proved to be very valuable in the planning of individual work. They should be kept, added to or altered as new facts appear, and referred to often in dealing with the children.

Even during the time that these interviews are taking place, as well as later in the semester, one day of each week should be devoted either to oral reading by the teacher (never by the pupils before the class) or to word games. The pupils come to regard oral reading as the highlight of the week. They not only enjoy hearing stories of a maturity which they cannot read themselves, but they receive invaluable object lessons in correct phrasing and pronunciation, and they learn that reading can be enjoyable.

The teacher should try to present a variety of material in his oral reading. Humor, if it is not too subtle, is very popular. Children like to feel that a teacher can enjoy a joke with them. Some of them need to learn that there can be humor without obscenity. A carefully edited and simplified version of O. Henry's "The Ransom of Red Chief" is a prime favorite in this field. So are the Paul Bunyan stories, especially when they are illustrated.

Any word games which are used must be very simple. For example, "sides" may be chosen and each child in turn be required to name an animal, a plant, or an object in the room. The same thing can be done with geographical terms, although low groups cannot go far in this direction. Oral spelling is almost impossible with such groups; besides, its educational value for any group is debatable.

In order to give each child the satisfaction of receiving "credit" for all the work he does, individual record cards are kept. On these are duly recorded the scores of all the written exercises the children do, with special notation when mistakes are corrected. The names of stories or articles read, no matter how short they may be, are recorded. Although this procedure involves an enormous amount of paper-

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correcting and recording, it produces very valuable results in creating a feeling of success and accomplishment in children who, it must be repeated, have a long record of failure and of unfavorable comparison with other members of their classes.

The use of the record cards continues throughout the semester. It is interesting to note that usually the children of lower ability ask to see their cards (which are always available to them) more frequently than do the brighter pupils, some of whom, it is hoped, learn to apply other criteria than purely quantitative ones to their work. The whole value of this card, it must be emphasised, lies in its effect on the pupil in building his self-confidence and sense of achievement. It means little to the teacher, who of course bases his grading on entirely different considerations.

After the individual interviews have been completed and the record cards made, the teacher should devote his time in varying amounts to the pupils who need help most. A few things can be done by the class as a whole, but not many. A visit should be made to the library, during which children should be encouraged, but not required, to take out cards. Subsequent visits may be devoted to an explanation of the mechanics of checking out and returning books. Beware of trying to teach the Dewey Decimal System to low groups! They will do well to learn to distinguish the fiction from the non-fiction shelves.

Whether instruction in the use of the dictionary should be a matter of class work or of individual explanation must be decided by the teacher. Certainly every child who is capable of profiting by such work should get it. However, some children will only be bewildered by even the simplest dictionary. Some class time should be spent on the following points: the alphabet, the use of a telephone directory, and the reading of clock and calendar. In many cases the class work will have to be followed by individual help. Many, many children cannot use these simple instruments, and are ashamed to admit their ignorance.

Beyond these few class activities and the weekly oral reading, most of the work should be done with individuals. Probably the brighter pupils should do more reading than writing; in most cases this coincides with their desires. If they become interested in a book, they should by all means be allowed to finish it without interruption, since the major objective of reading instruction in a retarded group is the awakening of a desire to read.

Sometimes a few of the best students can be trusted to help some of the poorer ones with their reading. This, however, should be undertaken with care, and the consideration of the personalities involved.

Pupils should be encouraged to bring books from other classes. In this way they not only get immediate help in their work, but they

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receive a practical demonstration of the value of reading ability.

The teacher must be willing to spend much time in helping a child to decide what he wants to read, and then in finding it for him in suitable form. This search sometimes leads into strange paths, and involves something faintly approaching a psychoanalytical procedure. At times the teacher may have to prepare reading matter himself if nothing sufficiently easy can be found in a field in which a child is interested. The task is well worth doing if it succeeds in providing his first pleasure in reading to a child who entered the class with a deep hatred of all things printed.

The suggestion previously made about the importance of giving time and quiet for reading should be constantly kept in mind. This is not easy in a class in which individual instruction is always going on, but every effort must be made not to disturb other children by any of the individual activities.

A large part of the teacher's time, as was said before, must be spent in individual instruction. There should almost always be someone working at the teacher's desk, or, preferably, at a table at the rear of the room. Again we must remember that many of the members of the class are shy, embittered, or inhibited, because in the past they have been forced to display their stumbling reading before an unsympathetic class and teacher. Now they must be given a chance to work out their problems quietly, privately.

Such individual attention means, of course, that in addition to providing a wide variety of reading matter, the teacher must have ready many written assignments for children to do while they wait their turn for separate work. It is easy enough to find or to prepare exercises; the difficulty lies in suiting the drill to the child, so that he will not spend his time in mere "busy work". Fortunately, it is possible to create several fairly homogeneous groups within a class, so that it is not necessary to plan wholly separate activities for each child.

This paper will not attempt to discuss specific types of exercises, nor the types of reading weaknesses which they are intended to remedy. It is valueless to describe only a few devices, and impossible to talk about them all. The teacher who has not done remedial reading work before will profit greatly from a careful study of several of the many books now available in the field. They contain drill materials for all types of defects, and give detailed directions for their use.

Despite the most careful of planning, however, it is doubtless true that in a large class some unnecessary routing work is unavoidable if much individual teaching is to be done. The teacher must console himself with the thought that at least the work does no harm, and that he is doing the best he can under the circumstances.

Tests (preferably various forms of the same standardized test)

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should be given, if possible, at least twice during the semester as well as at its end, so that the teacher can see if his methods are having any effect or not. The same precautions should be taken each time a test is given as were taken the first time to assure the pupils that their promotions or grades depend on the efforts they make to improve, not on the results of the examination. The results may be shown privately to those pupils who show marked improvement. Nothing need be said to the others unless they are insistent; fortunately, their memories are apt to be short. Whatever changes in procedure or emphasis the tests show to be necessary should, of course, be made.

In most slow-moving classes, the tests will show three types of students. One group improves almost miraculously. These children, of course, are not really of low mentality. They have either never before been properly taught to read, or they previously suffered from some physical or emotional handicap which they have overcome--sometimes with the aid of the teacher, and sometimes merely in the process of normal growth. A second group, usually the largest, improves slowly and soon reaches a plateau, with little further progress. This group probably consists of dull children who reach the limits of their mental capacities at fourth, fifth, or sixth grade level. There is not much that can be done for them when they have reached their peak, except to encourage them to use their ability to its utmost. They may never read "real" literature, but they can learn to select and enjoy things which are not entirely worthless. The third group, which is almost always very small, either shows no progress, or actually declines in reading grade placement. The presence of these pupils is of little help to the teacher's self-confidence, especially at the end of a semester. Some of them cannot learn; some need clinical help of a sort that a classroom of forty cannot possibly offer. The fact that some pupils seem to be poorer at the end of the course than they were at the beginning may be attributed to various factors--fatigue, emotional strain, the error inherent interests, or, alas, the influence of the teacher!

It is difficult to judge achievement from statistical tables. However, a teacher of reading in a slow-moving class will probably feel that he has achieved certain intangible results which tests fail to show. Some children will have begun to read voluntarily; the number of books checked out for home reading will probably be far greater at the end of the semester than it was at the beginning. Other teachers will perhaps report improved work and attitudes in the children. At least a start has in most cases been made toward convincing the pupils that they are capable of learning to read, and that they are not foredoomed to failure throughout school.

The object of reading instruction, in any type of class, is to teach reading by proving to children that it is both a useful and an enjoyable skill to possess. The teacher must try to raise each child's reading ability as far as his mental capacity, health, and cultural background permit. To this end, pupils must be given their choice of reading matter, so that their reading will mature with them. Special

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training must enable them to discover, recognize, and overcome their technical faults in performing the complex operations involved in reading.

To some the reading teacher will be able to open the doors to life-long enjoyment, stimulation, and solace. To others he will be able merely to give the tools to make living a little smoother and easier. In either case he can feel that he has done something for the welfare of his individual students and thus for the service of the country of which they are a part.

## EXPLORATION OF THE SELF THROUGH LITERATURE

Caroline Shrodes, Stockton Junior College

A reading program on the secondary school level, organized in terms of the individual student's personality with personal integration and social responsibility the criteria for measuring the student's attainment, need involve no reduction in the quality of the reading, no neglect of other goals such as simple comprehension of the printed page, establishing and using criteria for judgment of the literature read, distinguishing between art and propaganda, and becoming familiar with the various literary genres. In fact only through the personal, psychological approach can most students be taught to interest themselves in these less subjective values of reading.

What kind of person is the average college student who comes to junior college and enrolls in fifteen units of work, nearly all of which require mastery of the techniques of reading? Chronologically he is seventeen, eighteen, or nineteen, but what is his emotional age? His mental age? How is he constituted physically? As teachers we tend to type the student into conformist and rebel, into scholar and playboy. We do not specifically inquire into the factors which make for insuperable differences in the college student. His physical constitution may vary from an army classification of 4 F to one of 1A; his mental age may be that of a high grade moron who slipped through high school because of an attractive personality or a relative on the school board, or it may be what is officially called genius! And let us remember that there is probably more difference in mental ability between a person with an I.Q. of 160 and one whose intelligence quotient is 100 than there is between the latter and a high grade chimpanzee. Such are the variations in ability with which the college teacher must contend. But perhaps more significant even than the differences just noted are differences in emotional development. Not only is it true that one student is fixated at a narcissistic stage and another has already accepted adult emotional responsibilities, but there are the vast differences in emotional response to intellectual phenomenon, to the communal life of the college, to parental relationships, to frustration, failure, and success. We can only conclude that there is no such thing as the average student around whose collective interests and needs we can weave a strictly uniform program of reading. In spite of the Fortune poll and our mental image of Joe College in his plastered jalopy, there is no stereotype to guide us. Any reading program which does not take cognizance of these individual differences in the college freshman is ignoring the challenge which modern psychology and education offer to the teacher.

To suggest more specifically how the teacher of literature may take into consideration the varying interests, problems, and needs of the student and organize a reading program with them in mind, let me cite a number of case studies of a representative group of students, all of whom I happened to have in my classes during the last two years in a typical junior college. After reviewing each individual's history, I shall suggest the kind of reading recommended with the personal integration of the student

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Let us begin with Dave who entered as a sophomore after a year at Stanford in which beer busts, moonlight horse back rides, bull sessions at Dinahs, dancing in the dark at Long Barn, Saturday nights at the 'Mark', and week ends at Del Monte constituted the whole of his existence. As a result of a conference with Dave we learn that for all of his surface arrogance, he feels basically insecure; for all of his talk of wanting to get through college as rapidly and successfully as possible so that he may get a soft remunerative executive job, one suspects that there may be a latent desire to make some real contribution to society. He is at the moment suspended between two worlds, one almost dead and the other as yet powerless to be born. He could easily remain all of his life a playboy who might put in a few hours a day pulling strings so that the puppets might dance or he might become a responsible citizen with a social conscience. What should he be given to read, not so that he might conform to a teacher's preconceived idea of what he ought to be, but so that he will himself know what he wants and how to pursue his goals? Let us look further into his autobiography for clues to his personality.

His might have been one of the lives dramatized in an F. Scott Fitzgerald novel of the twenties: the first years spent in the care of a competent trained nurse rather than of a loving mother; his asthma, anemia, and frailty confining him at home so there was no contact with other children, his nurse reading him hundreds of books. On recovering from being sick, he found occasion to test the weapon of playing sick in the course of this peregrinations: winter in Cannes, spring in Paris, and summer in Brittany. On being later enrolled in public school in San Francisco the boy with the English tailor made clothes and thick accent was received, as might be expected, with contempt and scorn. Again in defense he used his wealth and position to impress the boys; he became an exhibitionist and indulged in fantasy lying. But he was a very lonely little boy who found contentment only in living in the world his imagination created. When his family received an extortion note threatening his life, he set off with mother and bodyguard, all under assumed names, on a central American cruise. The papers referred to his father as multi-millionaire and industrial tycoon; he was a celebrity on the boat and readily made friends who lured him back to the private school they attended. Here he could acquire a solid academic background, but the rigid caste system and English fag practises served only to accentuate his snobishness. His parents' subsequent separation brought on an added insecurity, and in the new freedom he was permitted by his mother, he acquired a pseudo-sophistication and worldliness. He became the proud possessor of a number of block letters, some horse show ribbons, innumerable 'correct' friends, and a choice collection of C's and D's. Since the latter did not permit entrance to college, and since his father was irate, Dave took his first job, as Rough-neck on a drill

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crew in the Coalinga oil fields.

Whether some of the more spectacular details (such as the extortion note and subsequent newspaper smearing) are true or merely a reverting to the period of phantasy lying, they are significant factors in our understanding of Dave's personality. Six months of coaching school prepared him for Stanford, his life there as we have suggested, being entirely extra-curricular. And then he came to junior college. He was an exhibitionist in the classroom, scoffing at the comments of the naive and the average student, expressing views alien to him if they would serve to shock the class or the teacher. He was a perfectionist, refusing to hand in papers unless he thought they measured up to the degree of excellence he had set as his goal. Conferences with the teacher revealed that he didn't dare go home on weekends for fear he wouldn't have the courage to return to a campus indifferent if not hostile, to his basic attitudes and behavior pattern. He desperately loved his mother who had never given him a feeling of security, so erratic had been her attentions to him. He had fallen in love, become engaged, and felt trapped, resenting the girl for her power over him, hating himself for being duped. He was twenty years old, brilliant in a flashy way, but tremendously vulnerable to what people thought of him, lonely, and miserable.

It was time to point his reading, to give it direction, to help him to see himself in terms of the complex motivations which were activating him. We were reading stories, biographies, and novels centered around the theme of personal relationships, trying to arrive at an answer to two questions of fundamental interest to students: first, what is the significance of the family relationships in conditioning the personality? Second, what makes for compatibility? Dave found it enlightening to read "The Silver Cord" and to realize in Mrs. Phelps an exaggeration of some of the characteristics his own mother displayed, to find in her sons some of the defense mechanisms, the groping, and the insecurity which had been his own experience during his formative years. He saw that he must be wary of allowing himself to become so submerged by his family and their mores that he would never be able to determine his own destiny. He was mindful of the fact that the kind of girl he was to marry and the kind of position he was to hold could easily be determined for him instead of by him. He realized that the alternate denial of his mother's presence and attention and the sporadic showering of her favors was responsible for his feeling of extreme dependency. In short, the dramatic picture of parental bondage served to illuminate and clarify his own background and contributed to his insight into his own behavior.

When the class discussion ensued after a study of several stories of heterosexual love, Dave played the to-be-expected role of cynic. In trying to arrive at a definition of compatibility he would preface every statement with a demand for consideration of the probable income of the potential mates. Were they going to live on \$100,000 a year, \$20,000 a mere \$10,000, or a paltry \$1500? If the former, the wife

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must fulfill her pre-ordained role as luxury commodity; if the latter, she must be a wage slave like her husband. It thus became the problem both of the class and the teacher to get Dave to concern himself with something besides income brackets and the external accoutrements of the marital venture. He strongly identified himself with the pompous husband in "Mr. Pim Passes By" for whom consideration of what the county would think would threateningly raise his blood pressure, to whom "right is right, and wrong is wrong all the world over."

On reading a number of stories and plays suggesting the thrill of mind meeting mind, the joy in finding mutual interests, Dave began to forget the importance he had previously attached to glands, furniture, and the mores of the nouveau riche. He dipped into Plato's "Phaedo", he shared the passion of Tristram and Isolt in Robinson's measured lines, he became Abelard and Romeo and other great lovers of the past. He read the romantic, somewhat sentimental novel of Charles Morgan's "The Fountain" in which he shared the idyllic love of two young people of his time and age and background. For the first time in his life he became aware of a world whose dimensions could not be measured by dividends.

His favorite author was F. Scott Fitzgerald, for he saw himself in the flattering image of a Fitzgerald hero who lived in the lap of luxury, got into scrapes at Princeton, was adored by women of all ages at home and on the continent to which he took annual pleasure jaunts, and eventually got a soft birth on Wall Street. It was suggested that he might enjoy Upton Sinclair's trilogy in which the hero, Lanny, bore certain resemblances to Dave, but who, under pressure of Nazi cruelty to some of his friends, grew out of his playboy dilettante role to become a socially responsible citizen of the world, determined to do his share to free man from Nazi oppression. On being told that Lanny's early experiences were reminiscent of his own, Dave commented: "But Lanny's father is a multi-millionaire whereas my father has very few millions." But he was encouraged to probe below the narcissistic image and take a searching look at the world in which he was living. He read Gunther, Van Paassen, and Vincent Sheean; he was intrigued by Rahne Prohme for whom happiness was impossible until she had found the secret of the relationship of the one to the many, for whom there could never be contentment as long as there was human misery and exploitation, to whom the plight of the Chinese coolies was of momentous concern. He began to see beyond the boundaries of his luxurious private world. From his early espousal of a dictatorship, half because he liked to shock and half because the role of dictator was congenial to him, he began to see the challenge of a functional democracy.

The conversion is neither sudden nor complete. But there is a gradual awareness of his own motivations, his own drives for power, his defense mechanisms. There is also an awareness of the world in terms of macracosm as well as microcosm and the beginnings of a desire to make a constructive contribution to his fellow men.

## Shrodes 5

Let us make the acquaintance of another student. Marian is to be found in every college, a girl talented but frustrated, whose bourgeois family cannot understand her. Her counselor had reported several threats to commit suicide; she loudly protested with a sage of another century that the greatest happiness in life is avoidance of pain. She spoke bitterly of her relatives to whom the possession of a Chrysler with white wall tires and victory for Stanford at the big game were the end and aim of existence. As she began to read Dreiser and Sherwood Anderson who, like her, could not conceive of such values as important; as she read Aldous Huxley whose cynicism surpassed even her own and D. H. Lawrence whose difference from the bourgeois community exceeded hers, she saw that she was not a stranger in a hostile world, but that these authors, highly respected, saw life much as she did. She began to feel less alone, less queer, and she acquired a powerful weapon--a desire to create as they did, to etch in word pictures the people and homes whose smugness had made her life miserable. She found she too could express in writing the hates and the fears that oppressed her and symbolically unleash her passions with her pen.

But still her impulses were destructive rather than creative; her outlook on life was nihilistic rather than affirmative. Now there was less danger of her turning inward upon herself in self-pity or self-destruction. But what could she believe in? What positive values could she affirm? The next unit of reading might well be an introduction to philosophy. A good book for her to start on is Irwin Edman's "Richard Kane Looks at Life" which takes a college freshman at Columbia through the various stages of finding a religion to live by, speculating on the good life, evaluating various professions, and even falling in love. From there she might proceed to a collection of "Living Philosophies," starting out with Alfred Einstein and his affirmations about life and continuing with the reflections on what makes life worth living of fifteen or more of his distinguished contemporaries. Another book which might serve to give her a sense of man's progress from 'quintessence of dust' to 'how like a god' is Clifton Fadiman's "Books that Have Changed Our Minds". This is heavy reading, especially if she is sufficiently interested to go from that survey to the original sources. She might conclude her quest for a faith to live by with Thomas Mann's "The Magic Mountain" with its panoramic view of the ideologies of the modern world.

Susan is another student who shares with all of her more fortunate contemporaries, but even more doggedly, the conviction that one can do anything and everything that he wills to do: whether it is to become president of the United States or whether it is a more modest desire to become a famed ballet dancer. Susan's own cherished goal, nothing can prevent one's attainment of his heart's desire if only he has enough will power. A poor physical constitution, inadequate mentality, poverty--none of these-- has any real bearing on the determination of one's destiny, Susan insists. We look into her history and find that she had as a child a severe case of infantile paralysis, and although the doctors assured her parents she would never walk again, she not only completely

## Shrodes 6

recovered the use of her legs, but she had already had many small successes as a dancer. There was only one way to interpret these facts, she asserted—her mother's will power and persistence and faith. Her mother's will power extended even further. Although Susan was nineteen and a very sensible, mature sort of person, her mother forbade her to go out on dates or even to invite her friends to her own home. Because of her childhood experience Susan invested in her mother the attributes of a deity, and as a result, she was a desperately unhappy girl, constantly reproaching herself for her ungratefulness, for her resentment of her mother's interference with her personal life.

Susan's censure of herself was exceeded only by her criticism of others, so severe and rigid were her standards of conduct. She needed to learn tolerance and understanding of human foibles, to see people overwhelmed by circumstances beyond their control that she might relinquish some of her perfectionist goals for herself and others. She was introduced to the novel, "Jean Christophe", the hero of which strongly appealed to her because of her interest in the arts; she saw how immensely vulnerable he was to the pressures and realities of life; she saw that not everybody, every time, has the power of choice. She read "Of Human Bondage" by Somerset M ugham, and studied the reactions of Philip whose club foot made him retreat into a world of phantasy. She read Ibsen's "A Doll's House" and saw how unattractive and pathetic is the doll wife who has never learned to make her own decisions; she read "The Silver Cord" and "Beyond the Horizon" and saw how parents, selfishly seeking to keep their children safe and secure can stand in the way of their growing up to adult responsibilities. She saw something of her mother's motivation in continuing to over-protect her. With this insight she no longer had occasion to reprove and castigate herself when she silently resented her lack of freedom in her home. She has made at least a start in acquiring tolerance not only of her own fallibility but also that of others.

Kay is another representative student, one of the many who instead of being dismissed as problem students should be helped because they have problem parents. Her mother, whom she adored, died when she was twelve; her father married the housekeeper, who apparently was more attracted by his income than by his children. A large number of aunts and uncles proffered advice to the father, the housekeeper, and to Kay and her brother. None thought that she should go to college; no woman in the family ever had gone. Why should she? The shock of her mother's death and the resentment against the step mother was so great that Kay suffered a nervous breakdown and was confined for over a year in a mental hospital. On being released she was very bitter and rebellious. Her reactions to class discussions in her first semester of English were stereotyped and conventional; although she had lost every shred of respect for her family during the painful months when they would have nothing to do with her in the mental hospital, she carried with her the home-nurtured attitudes about life. She brought also out of this period of incarceration a sense of being persecuted and a sense of shame.

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The first thing to do was clearly to rid her of the feeling of disgrace she harbored for having been confined as a mental patient; the second was to build up as rapidly as possible a sense of security, a feeling of identification with the college, since one with her family was no longer possible; and finally it would be important to stimulate her intellectually in such a way that she might develop resources which would provide her with defenses against a hostile world. Her rebellion against herself, her family, and the school, which stood in her mind for distasteful authority, must be turned outward that this abundance of emotional energy might be turned into constructive rather than destructive channels. Her bitterness must be modified so that it could be converted into a protective weapon instead of a self-destructive one.

First of all she began to read widely in the field of psychiatry where mental illnesses are looked upon with the same detachment and objectivity as are physical diseases. She read Millen Brand's "The Outward Room" and happily identified herself with the girl who was slowly returning to a complete acceptance of reality. She read Mary McCarthy's "The Company She Keeps" and found pleasure in her awareness that here was a talented, attractive woman, who, like her, was unable to cope adequately with a broken home situation and had to have psychoanalytic help before assuming a constructive role in society. She was thus able to trace further her own emotional conflicts to their roots in the past; she lost much of her sense of being different from other people and irredeemably disgraced.

She read avidly a large number of novels of bourgeois families that she might lose her sense of separation from her contemporaries: "The Forsyte Saga", "Buddenbrooks", "The Way of All Flesh". She recognized her relatives among the Forsytes and in her recognition lost some of the bitterness against them. She learned to laugh at them instead of to despise them. She began to see herself in relation to them, to write about them, and gradually the bitterness emerged in the form of satirical sketches, a weapon which served as an excellent outlet for her emotional energy. As she lost her sense of aloneness and learned to give expression to her disdain, she found the people around her more interesting; she ceased to retreat into her shell and began to assume more social attitudes.

Mrs. Johnson is a middle aged woman who enrolled in junior college, because, she confessed, she had been miserable and shy and afraid all of her life, and she wanted her son to have a decent kind of life, free from fear. She hoped that she might learn what to do and what not to do to safeguard his happiness. She told of her insomnia, of waking up at night screaming. She said that several times she had come up to enroll at the college but had turned back before seeing a counselor so fearful had she been to go through the routine of enrollment. Her father had been a minister and had imposed rigid restrictions upon her all of her life; finally she had defied him at the age of twenty-one and had gone off to a nurse's training school so as to be on her own and to be of some service to others. Still--twenty years later--she felt

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remorseful at having disobeyed him; still she remembered with terror the small town villagers from whom she had escaped, hawk-like in their vigilance, ready to pounce upon their prey at the least mis-step.

It was obvious that this intelligent, good-hearted, but terribly repressed woman had been weighted down for twenty years with an oppressive sense of guilt. It was no doubt responsible for her nervousness, her fear of speaking to strangers, her nightmares, her insomnia. One had to begin gradually to give her confidence in herself, to help her to realize that she was an intelligent woman. A chance remark in class about inferiority complexes taking root in the earliest years brought her up to the desk one day eagerly to recount that her brother used to say to her, "You are just a dumb hulk; you can't learn anything— why do you go to school?" "Could it be", she inquired, "that I have remembered that all my life and that is why I feel so inferior?" Once she began the process of recall, the reminiscences came rapidly, and she began to piece together the episodes from her childhood which woven together had made a wall against which she had battered her head in vain ever since. She read Louis Bromfield's "The Good Woman" and found in it an exact parallel of her own childhood experience in which feelings of guilt were constantly being engendered. She read Somerset Maugham's "Miss Thompson" which suggested to her the possible motivations of her minister-father who, afraid to give way to the slightest indulgence of self, set up a rigid reaction-formation whereby his whole life centered around prohibitions, self-denials, and relentless consciousness of sin. Once she came to understand why she had never known a moment free from guilt and fear, Mrs. Johnson began to relax a little, even to laugh at her scruples. Her education has just begun. She needs to read widely in many fields, to extend her experience vastly beyond the boundaries of her insulated world, before she will develop a wise tolerance of others and complete understanding of herself. But the ground has been broken, and she is looking forward to another semester at school.

Finally there is Harold whose psychological tests suggest that he is of superior ability. Nevertheless he is sullen in class, seemingly incapable of concentration, and apparently lacking in comprehension of relatively simple reading matter. An interview brings out the fact that he has been told he is superior, and yet competition in class with others has invariably convinced him he is not only not superior but stupid. Obviously this is a severe blow to his ego. Hence, he ceases to participate in class work, substituting attention and laugh getting devices for pursuance of his studies. We learn further that Harold is very unhappy in his home. His mother is Jewish and his father, gentile; he cannot bear the thought that he is not pure Aryan. His only success in college to date has been his facility in art. Certainly it is the role of the teacher to help Harold find something he can read with enjoyment and comprehension. He must be made to feel successful. The first book recommended was Maugham's "The Moon and Sixpence" the fictional portrait of Gauguin whose emotional conflicts kept him in a state of constant turbulence. Harold is immediately intrigued. Here is a great

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painter, who, like him, had seemingly endless troubles. The process of identification was so successful that he was carried over the hurdles of several hundred pages of reading, subtle nuances of style, and profound psychological insights. His reactions to the book by no means indicated complete understanding, but he did perceive some of the motivations of the painter-hero. Through his discussion of the book we learn more of his own frustrations and fears. We have just made a beginning with Harold. He has got to the point of articulating his problems, admitting them to himself and others, instead of escaping in day dreams and exhibitionism. He has read, for the first time in his life, a novel from beginning to end and confessed pleasure in it. He wants to read another one like it. A remedial reading program is in order, but first we must win his confidence, and we must convince him that reading is fun. Our next reading unit will be Louis Adamic's "From Many Lands" and Ludwig Lewisohn's "Upstream" in the hope that his racial intolerance may be at least modified.

These are but a few of the students whose problems have to be met. The teacher of reading can immeasurably aid the student facing problems of personality and adjustment by giving him a better understanding of himself through the vicarious experience which literature affords. The Aristotelian theory of catharsis propounded over two thousand years ago, no less than the concepts of Freud, suggests that sharing another's experience may purge us of our own hates and fears and permit us to release in pity some of our aggressive drives. If we understand why people are impelled to brutality or self-torture or anti-social behavior, we can less easily revel in our own superiority, and self-righteously condemn the victims of such impulses. Only when we learn to assign adequate causes to man's behavior and perceive the significance of his acts in the context of his total personality, shall we ourselves be substituting for irrational and emotional reactions the cognitive, investigative powers of our higher faculties.

We recognize in Sophocles, Shakespeare, and the moderns patterns of emotion common to us all. The artist has imposed design on the raw materials of life, and in his detached view we may find insights into the problems of our own lives. Through the vicarious experiences of literature, we may approach that inward and outward integration of self which it is the purpose of the teacher of reading to foster. We may see that neither the individual nor his environment is static and inalterable, but subject to change and interaction, and that man has some power to direct both himself and his world.

## APPLYING THE DEMOCRATIC METHOD TO THE SELECTION OF MUSIC MATERIALS

Lenel Shuck, Director of Music Education, Fresno City Schools

Any effort to discuss objective methods of selecting music materials must first take into account the distinction between music as art and music as science. Attitudes toward the value of music materials are almost invariably arrived at by subjective means. It is not unusual to hear a music teacher or supervisor say "We must teach the higher and finer things in music education," or "What we need is more good music." To circumvent this problem of terminology the serious student must necessarily realize that he is dealing with a problem in semantics. Terms such as higher, finer, and good, are what we may refer to as polar words. By this we mean that they change quality in relation to the situation and circumstances where they are used. For example: Good music means an entirely different thing to a boogie-woogie swingster than it does to a highly trained symphony orchestra conductor. What constitutes the difference is debatable and it is not clarified to any degree by stating that all music is made up of good melody, harmony and rhythm. In fact, aestheticians do say that these elements are the basis of style and that their judicious employment constitutes "good" style; but we are still confused by a subjective, polar term for we have no satisfactory agreed-upon referent for good. The numerous ramifications of this discussion, its general lack of direction, and the hoped-for ultimate goal can be seen by logicians to be a case reductio ad absurdum. How then do we treat this less subjectively?

Music supervisors and numerous Ph.D's long have struggled with the problem of aesthetic subjectivity with not too much light thrown on the subject. Perhaps at some time in the future, a brilliant student will find a solution that is at least a semi-scientific method of aesthetic evaluation. In the meantime, the educator may utilize a fairly satisfactory simple working method. It stems from the very framework of government in which Americans live. I allude to democratic pragmatism: the group method of using that which works. Now, how may we focus this generalization upon the subject at hand?

A highly skilled music supervisor or director, although definite in his ideas about music materials and proficient as to his performance, is not in the most satisfactory position to select materials dictatorially or arbitrarily for a group of teachers or children. The why of this question enters into a philosophical discourse revolving around the extended personality of the specialist who attempts to superimpose his ideas and attitudes upon the more circumscribed experience-background of another. Perhaps this may work in a dictatorship, but it fails in a democracy. We should not impose art areas or subject matter upon learners and tell them to stay after school until they appreciate. The wise supervisor knows that a dawning awareness ultimately leads to a love for the very materials he had in mind but that appreciation can not be forced.

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Appreciation is arrived at by self-activity on the part of the learner, not the teacher.

Democratic pragmatism is often thought of as a slow method, but after a hundred and fifty years of successful existence, its philosophers now realize that its goals are more efficiently attained although more slowly arrived at. Efficiency does not always mean speed. It does suggest totality of understanding of a whole situation.

Specifically, let us take up at this point a method constructed within the framework of the philosophy and exploration sketched above which will lead to a functional selection of useful music materials. At the conclusion of this statement we will examine an objective check list which could have been arrived at by the method.

Selections of materials in any field may be successfully accomplished by taking the combined suggestions of many people based upon their personal choices or aversions. It works more efficiently than where one person selects materials for all. In the case of music this method is especially appropriate, for musicians often differ widely in their attitudes toward the worthwhile-ness of music to be included in a repertoire or library. Put to a vote, however, a rather valuable check list may be arrived at as a criterion for selection. If the material is intended for a particular grade level it is not unwise to have a large group of unselected children hear the material and vote their preferences. Items upon which light might be shed in this way could, conceivably, include such general headings as: (1) Is the music aesthetically beautiful? (2) Does it have genuine logical or psychological educational value? (3) Is the word and subject-matter content consistent with the interests of children at the level for which the material is designed? (4) Is the material pleasing to the eye? (5) Is the material worthy of inclusion in the child's permanent repertoire?

These are only a few of the many points of attack which give some key of an objective nature so that the person who procures the music may feel that he has a measuring stick by which to be guided. Above all, the procedure does avoid the difficulty involved in defining and establishing referents for polar terms. The California State Department of Education, Division of Textbooks and Publications, recently mimeographed a "Score Card for Rating Music Textbooks". The items in the "Criteria for Evaluating the Books" were the kinds that one might expect to result from a group meeting of teachers, or teachers and children. For the purposes of selecting a state-wide textbook the State Department Score Card was fairly satisfactory. It would not be entirely satisfactory to use this same Score Card in an individual system, however, as that system could make a more satisfactory score card in the light of its own individual and local needs. This State score card will be reproduced below. The reader is cautioned to think of it only as an example; not as a recommendation for general usage.

While examining the portion of the chart reproduced below, it should

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be observed that the weighting of the items is important. This decision, too, can be arrived at best by a group vote. For example: Item 9 has a total point value of only 50, whereas item 1 receives 200 points. The supervisor of music who is primarily an instrumentalist himself might readily have given number 9 a much higher point value in relation to number 1. Conversely the vocal supervisor might consider item 4 to be of more importance than item 10. For the good of the largest number of people who are to use the music in a given community, the democratic method is infinitely superior. It is not a difficult undertaking to provide for each person voting an opportunity to make his own weighting scale and, by striking an average for the total on each item, to arrive at a weight distribution that is acceptable to all voters.

In conclusion, I repeat my statement that the democratic method as employed to the selection of music materials is an attempt first, to gain agreement among many people; second, to clear up communication difficulties involving subjective aesthetic polar terms; and third, to approach the problem with at least a suggestion of objectivity free from bias. If the method aids even in one of those ways it should be worth the effort required to put it into practice.

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California State Department of Education  
Division of Textbooks and Publications  
Sacramento  
September 30, 1941

Score Card for Rating Music Textbooks

Item in Criteria for evaluating books	Weighting of books	Publisher # 1	Publisher # 2	Publisher # 3
1. Quality of Material	200			
A. Music				
B. Words				
2 Interest and Meaning	150			
3. Grading	75			
4. Voice Range	75			
5. Amount and Variety of Material	200			
6. Illustrations	50			
7. Index	25			
8. Descriptive and Biographi- cal Material	25			
9. Instrumental Music				
1. Material for appreciation of instrumental music	50			
2. Selections for children's rhythm orchestras	—			
10. Piano Accompaniment	100			
11. Mechanical Features	50			
<b>TOTAL</b>		<b>1000</b>		

Note: Some deletions and changes have been made on this chart for pur-  
poses of simplicity.

## HOW TO READ HUMAN MINDS

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"And this is in reality one of the great and marvellous characteristics of literature (and which will allow us to understand the role at the same time essential and limited that reading can play in our spiritual life) that for the author could call them 'conclusions' and for the reader 'incitations'. We feel very well that our wisdom begins where his ends, and we would like him to give us answers when all that he can do is to give us longings. And these longings he only can awaken in us by letting us contemplate the supreme beauty which the last effort of his art has permitted him to attain." (Marcel Proust)

Not all people, however, are fortunate enough to bring fulfillment to human yearnings creating these works of art, or even enjoying them. Books have a different value for everyone; they may be used to bring knowledge, pastime, comfort, or even as a neurotic escape from reality in which the reader does not feel at home.

Few people, however, care to read the most interesting book among and above all—the human mind. And yet this too would lend itself to be read by everybody who learns the alphabet of this language and studies the spelling of its words. Far too few; in spite of the fact that men for innumerable years lived together in smaller or larger groups and, so, had to be concerned with foreseeing their fellowmen's intentions to secure physical survival.

Self preservation, the most primitive and the most "biological" desire, necessitated understanding the friendly or unfriendly attitudes on the part of the others. Long before any recording of it appears in the huge book of science, understanding human nature must have been of most vital interest.

All the legends of ancient time, the sagas, religious and secular scriptures, rites and rituals give proof of this desire to secure knowledge about people. And great knowledge is certainly to be found in all these documents handed down through the centuries in word and rote. It appears, however, very clearly that most of the emphasis was laid upon the passive endurance by man of some god-or-devil-sent obsession for the good or for the bad; fate befalling the one, not touching the other. In manifold variations people are objects of a blessing or a cursing power, and their lives the mere result of a not self created destiny. Admitting the premise of a friendly or fiendish doom their actions can be explained as a result of it, but no understanding is possible of an individual irresponsible for his actions, and therefore without any more claim to sympathetic evaluation than a tree struck by lightning.

Then came the Greeks, and Greek spirit discovered that there is

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more to a person than blind endurance of suffering or happiness imposed from supernatural powers. The ~~Fu~~ <sup>W</sup>is, ~~or~~ <sup>the</sup> ~~g~~ <sup>promise</sup> and demand of the Temple of Delphi, throws a bright beam of light into the darkness of the human mind. "Know thyself," a problem of so great an importance that there are more books written about it than about many other subjects, and so vital a problem that many hope they have solved it--yet, it seems as if they had hoped in vain as they don't know much more about themselves than the caveman or the cannibal who ate his gallant enemy's heart to inherit his strength and courage.

Many theories have been professed as the means to find out about people's minds; many sciences and many quackeries have busied themselves with the problem. Mind-reading became quite a profession under various titles with more or less acknowledged scientific background; even with the very profound scientific background of physics, chemistry, medicine, academic psychology to name all the attempts that have been made to recognize the various occurrences in the mind of a person would fill a whole book. All of these theories suffer from the wrong premise that there was a mysterious something acting upon the unmysterious body and forcing the latter to react in specific ways. The dualism of mind and body is perhaps one of the most fateful ideas human brains (not minds) ever conceived. Another grave mistake was the conception of the so-called psycho-physic parallelism, a modification of the more primitive trinity of mind, body, and soul.

It is strange that most modern psychologies still advocate the mysterious "it" under whatever name it may go, emotions, feelings, thoughts, heredity, surroundings, etc., in order to explain the behaviour of an individual who still is seen as the victim of something for which he is not responsible, "induced by the gods to become guilty and then left to his agony", as Goethe expressed it.

At all times, however, some people had "eyes that see and ears that hear;" artists, writers, poets who could read human minds and embody what they read in the figures of their creations. Single individuals of imperishable greatness—Sophocles, Shakespeare, Goethe, Leonardo, Dostoevski, Beethoven, Mozart, and others who may sometimes have failed in the ~~Fu~~ <sup>W</sup>is, ~~or~~ <sup>but</sup> understood life and human beings. Without any theory they recognized the tragedy of the person who had to act according to convictions--however wrong these may be; they saw the individual moving in a world which in its chaotic complexity presents an eternal task to be solved. Because of the limitations through human imperfections people err and stumble, are victorious or fail, yet they have to act, as action is the only expression of the "I"; therefore the personages of great works appear so tragic and interesting because they are shown as caught in their own net, suffering from a self-inflicted agony, blissful in a self-created joy. People who move and are not tossed around by luck or misfortune, who live and die and are not "lived and died" by any motivating internal or external force.

To state lightly, as so often is done, that the great insight of

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the "genius" into human minds is to be attributed to "intuition" which enables him to explore the secret realms of the mind closed to others is one of our common human superficialities.

"In the beginning was the word." Many words have been coined such as intuition, the unconscious, and so forth. Hypothetic constructions to prove assumed and not proven premises. Words, mostly without any meaning, but useful enough to obscure the vision and deafen the senses to the reality behind them.

The capacity of the great artists of the world for empathy which is needed to reach human beings' minds does not stem from a mysterious gift, or from a special development of their brains, but from the fact that they felt themselves one with others and one with the world. This oneness allows for a complete depersonalization and identification with other people, for an openness to values originating from the creative power that every single one possesses as a trait differentiating human beings from anthropoids.

Unfortunately the willingness to empathy is only a potentiality at the child's birth; it has to be developed through education. Unfortunately too, it is far easier to be content with the over-estimation of physical and biological factors and the underrating of the psychological aspect of an individual because, otherwise, one dreaded fact would have to be considered--the responsibility of the individual.

Although psychology seems to be the battle cry of our times, even very modern schools of clinical psychology did not go very much further than former attempts in this direction. Many of these schools have contented themselves with the substitution of one magic word for another one, introducing "the unconscious," "the soul", and so forth as another determining factor in people's behaviour. The training almost exclusively received in modern school systems, is the same as before: A given stimulus originates a certain reaction. And many of these systems can be proved as showing over most complicated detours the world-ancient Truth that B follows A. This truth, valuable as it may be to know that there is no cause without an effect and vice-versa, explains certain facts on the purely physical basis but it is absolutely unsatisfactory for the understanding of an individual. The question "Why" the only correct question in the realm of nature, does not allow an answer in the realm of psychical life of human beings.

Strangely enough, people have busied themselves for centuries to find out what influence on human beings the flight of birds might have, or the constellations of the stars. Carried away by the unanswerable question, "Why?" they seem to have overlooked that there existed not only a passive acceptance of facts but also an active modeling of these by the individual. Whatever cause may be put in the beginning, Nature, libido, emotions, thoughts, etc., there is no meaning to the reactions, because there is no idea of responsibility in it, no "I".

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And because of that it seems that most psychological theories are doomed to fail as keys to reading people's minds.

All the physical or biological attempts to explain the various reactions of a person to given stimuli apparently lack respect for the development of a cortex in human beings which allows them "consciousness", the greatest progress from the level of purely or mostly thalamic, instinctive, reactivity on lower levels of the animal kingdom. On this level there is none or little meaning to be found, there is no capacity for recognizing values, except the primitive ones of preserving mere existence. The essentiality of values is the creation of the consciousness of the individual. From this standpoint, which requires liberation from the magic of the word, "Why?" the Faustian conclusion, In the beginning was the deed, becomes more than a philosophical play with ideas.

Where explanation fails to yield the secrets of human minds, understanding opens the door. Only teleological psychology makes this understanding possible, seeing people as a part of the world in which they move, act, strive, intend. Every movement of the individual (the indivisible and undivided entirety Adler's) has meaning and purpose; his emotions, thoughts, memories, feelings, are the keyboard of a very complicated instrument, touched to bring forth the one sound the individual craves to hear: superiority, security, personal value--different expressions for the same ideal. This last aim of perfection, of Godlikeness, in all its manifold abstractions shows every movement as a means to reach it.

From this viewpoint individual and world are no more seen in opposition but as a unit, a relation of a personal to an extrapersonal entirety, of which it is a part.

From this standpoint, too, the antithetic absoluteness of so-called qualities: good-bad; lazy-diligent; truthful-mendacious, etc., are words in a vacuum. They become positive or negative, constructive or destructive actions in the relations of one individual to any problem outside of himself.

It is the most interesting experience to realize that where the answer to "Why?" remains mute, the "What for?" opens the way to understanding human beings. All the puzzling contradictions, the "ambivalence" in human characters, disappear and the unpredictability of people gives way to a clear picture of their behaviour not only in their present but also in any future situation. It does not help any to talk about the "two souls in one breast," the "animus and anima" Jung's the "masculine and feminine" Weininger's.

Seen from the standpoint of the aim, the greatest apparent contradictions resolve themselves into adequate or inadequate means to reach personal value, whatever the individual may conceive this to be. Take for instance a grown-up man; married; father of a child; who practices most violent sadistic actions at home, and in his office suffers from

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all the tortures of masochistic self-humiliation. Or a child who is a devil at home and an angel in school. No theory of dualistic, split, or ambivalent personalities can explain this difference in behaviour or allows us to recognize what goes on in these minds, but an individual on his way to a fictitious aim of superiority might well make use of so contradictory means.

Misinterpreting early childhood impressions in a world that is made by and for adults the child builds up a world of his own, a caricature of reality; abstracting from it the place where his weakness would be turned into strength; his lack of power into all-might; his lack of knowledge into omniscience. A world picture is produced far away from reality, and leading sometimes from the necessity of adjustment to the world to the craving after adjusting the world to oneself. A pattern of life is created with the expectation of securing self respect in a self centered microcosmos.

Unless, it is changed through education to accomplishment, this pattern, normal in early childhood, would have to lead with pathetic certainty to a condition in later life which psychiatry and clinical psychology are accustomed to call by various names, all meaning that the individual has failed in his social adjustment.

The conception "social" is perhaps the greatest proof of the mistake to visualize human beings only as objects of nature. In a cause-effect relation there is no place either for "society" or for "adjustment." Who will blame the stone that torn loose by a storm hits and hurts somebody? The stone has no choice. Nature is valueless in itself. The evaluation is given to it by man. The contradiction lies in seeing the individual as passive, and yet expecting him to make a social adjustment as subject in society in which he has to obey the rules dictated by the logics of life, and to bend to the requests of culture. The value of a person is not given to him, but is created by him in his active relation to the surrounding world.

That not all children remain ill-adjusted in spite of their equally helpless start is due to social consciousness, social interest, an imminent potentiality in mankind and the determining factor for the recognition that a being belongs to the human race. This very social consciousness that makes it possible to experience the "I" in the "you"; to decipher signs made on stones thousands of years ago; to read languages long forgotten and "dead;" all that because life always had the same meaning for people. This very social consciousness is the leading factor in adjustment to the world or, if it remained undeveloped through bad education—in all the pathological forms of social aberrations.

The egocentric parasitism of the infant and the outgoing symbiosis of the normal adult are nothing but different states in the development of social interest.

The individual as a whole with all his inborn potentialities which

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have to be brought forth into action, finds in himself and around himself such a variety of problems which have to be solved that many misinterpretations and misunderstandings are bound to occur. The resulting shock experience may be exploited later on as a reminder not to venture too far into the jungles of an unknown but feared chaos. All the means at hand, one's organs, emotions, thoughts, recollections, dreams are put into the service of avoiding any situation which could bring a repetition of the formerly experienced loss in self-evaluation; and the whole world from then on, unless the individual learns to understand and correct his mistakes, is looked upon through the smoked glasses of protective distanciation. The individual deludes himself in an increased craving after security in whatever form it may be conceived of: power, money, knowledge, and the aims of accomplishment are sacrificed for unreachable goals of superiority.

As all the latent potentialities are developed according to one's aim, every single movement in life shows the same direction towards it. The individual intercepted by the observer on his way to his concealed ideals lays himself open in his intentions not by what he says, thinks, feels, emotes, but by the way he acts. Luther's advice: "Don't look at people's mouths, look at their fists," is one of the many indicators that deeds are to be evaluated, not words. A wisdom known long ago but apparently not too widely understood.

Armed with the tools that a teleological conception offers the human mind is as understandable a book as ever was written. The question after the meaning of anything that can be observed in a person can be answered if the individual is seen as a unique wholeness on the way to his self created abstractions from reality. Only then the picture is correct if nothing, not one single movement, in the inner world of the person would show a break in the unity. Whether the aims are reachable or unattainable does not change the unity of the picture, it only shows the degree of social consciousness the person has developed. The higher the degree the greater is the expansion of the individual reaching far out away from himself into life and embracing wider areas of understanding and empathy. This is the way of the "intuitive," creative, objective personality. The lower the degree of developed social interest the narrower becomes the world of problems, and the more negative or destructive potentialities are brought into action in order to secure a fictitious ideal of personal safety. The subjectivity of the self centering person expressed in fears, emotions, and so forth does not allow for explanation but brings about a restriction of the radius of activity in all the general problems of life--society, work, love--which in extreme cases may lead to an explosion in suicide or insanity.

With this outlook on life the problem of books, their authors and their readers, gains a far greater interest. The use people make of books as pastime, comfort, neurotic escape, is understandable if the reader as a whole is taken into consideration. It makes reading more interesting because the contents of the book are no longer evaluated

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according to the gravity of the problem presented but according to the fact whether or not the author created his figures without a break in their characterization. Only then they can be understood and their fates are of importance because they must act as they do, and could act differently if they could see through their mistakes.

Whether a book is good or bad does not depend upon most extraordinary events described in them, but upon the art of the author to make his figures live; live in all the tragedy of human imperfection, doomed by themselves to their destinies.

With this outlook, too, a bright light is thrown on the personality of the author. Art in every form, literary works, paintings, music are the "conclusions" to which the artist works himself through to the expression of his own personality in the form of his creations. If, for instance, a person never overcame the shock experience of being an eldest born child dethroned by the arrival of a younger one (a very frequent occurrence in eldest-born children) and has therefore created as his role of life: Never to yield power again--his attitude will show in his books. Passages, sentences, which otherwise would sound, maybe, even illogical, are completely consistent and anchored in the writer's pattern of life.

Storm, a German author, wrote in his diary during the Napoleonic war in Russia: "I have learned that 10,000 Russians defeated 18,000 French. I don't think that this is right: Power should always remain power."

Physical defects of the writer or painter show in their creations, sometimes only in the overemphasis of certain details. A painter whose greatest fear was to go bald early, as baldness was a family symptom, took enormous pains to draw in his otherwise very impressionistic pictures the hair of his models with classic exactitude. The same artist, drawing a series of illustrations to "Crime and Punishment," in the scene of the murder put an axe into Raskolnikow's left hand. Being a lefthander himself it had not caught his attention that the change of hands looked rather striking.

Eye deficiencies of the author or painter are visible in their works. The art of describing minute details, as for instance in the works of Gustav Freytag and Alphonse Daudet, allows a guess on their nearsightedness, which both of them admitted as a very painfully experienced defect in childhood.

There are so many examples to be found in this field, that only a few can be given to attract the attention of the reader or observer to a realization of how much he misses if he has not learned to look behind the screen of personalities.

So many various attitudes of people can be seen from their works

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that there is a fascination in the idea that works of art not only reveal abstract beauty but also form a bond between their creators and the ones who absorb. Painters whose landscapes indicate that human beings don't count for them, as for instance one artist who showed people only as seen from behind, with one exception, the mother; writers who may describe people excellently but fail in every love scene; others whose loneliness or fears shine through every line they ever wrote, and every picture they ever painted. And so in endless variation.

Although it seems more difficult to recognize the same problems in music there is no real difference as music, too, is the expression of the composer's personality according to which he solves his self-set problems. Beethoven's agony, Mozart's etheric "beyondness" show even there where the first solves problems of gaiety, the latter problems of death. Mozart's requiem, finished a few hours before his death, opens all the horizons of a life full of hope and meaning, in which personality remains eternal.

The same problem, death, was handled in another requiem by a modern artist, and although it is said to be a masterpiece in composition, death here is so final, life so hopeless, that the too empathic listener may feel suicide to be the only solution left.

The greatness of an artist is not given by the importance of the problem he tries to solve. His immortality lies in the breadth of conception, in his understanding of the oneness of every single human being, and his knowledge of the reality behind the problem. This differentiates the writer from the scribbler; the painter from the dauber; the composer from the scrawler of notes. The would-be artists force the object to serve their own vanity, and therefore are slaves to themselves. The "impressions" which they try to express are merely subjective opinions without any relation to the world. This makes their productions so uninteresting that they never express anything beyond the narrow limits of today.

The real artist, however, who has performed in himself the union between "I" and "you", opens perspectives into the future, horizons of hope and encouragement for those who understand their task in the world for the world.

## READING IN THE ACTIVITY PROGRAM

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One of the fundamental principles of the activity program, is that learning in school shall be life-like; that it shall proceed under conditions similar to those existing in life; that usages made of learnings in school shall be similar to usages made of these learnings in life.

Applying this principle to the field of reading, then, it would seem that in determining the place of reading in the activity program, our first step might well be that of turning to life's reading after school days are over, and ascertaining what major types of reading are used in normal life situations. Life reading seems to fall into two general classifications, one of these we shall call Applied Reading; the other we shall call Free, Unapplied Reading.

Applied Reading may be defined as that type of reading in which a person engages for some specific purpose, after which he puts the results of his reading to some immediate use. Thus, Mrs. Brown reads a recipe in order to find out how to make a cake, then she uses the information thus obtained in actually making the cake; Mrs. Leisurely reads many articles pertaining to the subject of "Woman's Place in a Democracy" in order that she may prepare a paper to read before her club sisters; Dr. Swanson reads an article in his medical journal describing the discovery of a new use of Vitamin B-1 which has been found successful in dealing with a certain malady, and then he prescribes Vitamin B-1 as a solution to the baffling and unyielding case of Mr. Bower who has been suffering with this malady; Mr. Average American laboriously reads the instructions accompanying his income tax blank, and then he proceeds to use this information in preparing his report. In each of these life situations the individual has been reading functionally; he has been reading for a purpose, and applying the results of his reading to some immediate use—thus, he has been doing Applied Reading.

It is not at all difficult to reconcile Applied Reading with the activity program. The increasing practice of permitting children to engage in many first hand experiences and activities is calling forth hitherto untapped possibilities for Applied Reading. A wealth of reading materials which serve children's purposes grow out of and accompany these experiences and activities, materials which children themselves prepare with the guidance of the teacher. They record on charts or in their notebooks plans for their undertakings; questions to which they wish to find the answers; lists of books to which they wish to refer. They compose stories, group and individual, which they prepare for booklets, and they compose plays and songs which they or the teacher write down for some use which they have in mind. They print labels for construction work, exhibits, posters. They write items of class or school or world interest for a class or school newspaper; recipes

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for cooking; directions for making things.

In all of these cases children have reading experiences which are meaningful and functional to them because they make some use of the symbols or little compositions which they prepare.

This Applied Reading in which children engage in the activity program is very valuable, indeed. It is purposeful, it is usually accompanied with high interest, it draws upon a wide variety of materials, and it makes use of many reading skills in natural reading situations. Surely reading experiences of this type are synonymous with that phase of life reading which we are classifying as Applied Reading.

Now let us examine the other major type of reading which we find in life, the phase which we are classifying as Free, Unapplied Reading. This type of life's reading seems to be rather generally concerned with unapplied effort; it is largely a free activity in which the individual reads selections of his own choice simply for his own enjoyment or enlightenment. He reads the "funnies" every morning because Donald Duck's escapades give him a chuckle to start his day right; he reads the details of the golf tournament because of his interest in golf; he reads the headlines of the daily paper because he wants to know what is going on in the world; he reads a mystery story for the thrill of guessing who stole "the black diamond"; he reads a novel for the pleasant reminder of the early loves in his own life. He doesn't read any of these selections for any practical or applied purpose, but makes his choice in terms of his interests, reads these selections solely because he wants to read them--his reading is free and unapplied.

Schools everywhere are encouraging the free reading of pupils, through the use of well-stocked classroom libraries and school libraries and public libraries. Extensive reading of fascinating stories, poems, and informative articles just for enjoyment and enlightenment is now a prominent part of most school reading activities. Surely this type of reading has a large place in the activity program.

There is another type of reading, however, which we do not find in life but which must be considered in school. In order that children may be freed progressively and increasingly to engage in the two major types of life reading, most educators believe that it is necessary to provide another type of reading in school, that of definitely organized reading instruction for the purpose of developing the various reading skills as efficiently and rapidly as possible. This type of reading we shall call Developmental Reading. Developmental Reading is a temporary school measure which is essential in preparing children to engage with satisfaction in life's reading activities: Applied Reading and Free, Unapplied Reading.

If Developmental Reading is efficiently guided and the child has ample experiences in Applied, and in Free, Unapplied Reading, then he should as he progresses through the grades gain control of increasingly

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difficult reading skills. This increasing mastery of skills should enable him gradually to slip into the practice of engaging in increasing amounts of Applied Reading and Free, Unapplied Reading until he reaches the ultimate point at which life reading will entirely replace Developmental Reading, and he stands an independent individual fully equipped to use the reading tool to enrich his life in manifold ways so long as it may endure.

It is very easy to identify the teaching of Applied Reading, and Free, Unapplied Reading with the philosophy of the activity program. Teachers who are imbued with the basic philosophy of teaching subject matter and skills as they are needed in pursuing a problem organized around a center of interest, are often puzzled, however, as to how they can reconcile this philosophy to the teaching of Developmental Reading in which the skills are built up through the use of organized sequential materials.

Most reading books at the present time are organized into sections or units, each of which has to do with one subject. Very frequently this subject belongs to the social studies or science fields. For example, there may be one section containing stories which have to do with pets; there may be another section which has to do with community life; another with birds; another with Colonial settlements, etc. It may be that the teacher plans to have a large center of interest or unit of work organized around a social studies or science topic which is the same subject as that treated in one of the sections in the reader. If so, all well and good. The background readiness which is established in preparing for the large center of interest will carry over to the reader topic, or vice versa, and the two will reinforce each other very well.

On the other hand, the teacher may not wish to develop as extended centers of interest the topics which are dealt with in the basic reader. The interests and needs of her children or the demands of her local course of study may cause her to develop as large centers of interest social studies or science topics which do not occur in the particular basic reader which she is using. Still she feels that the majority of her pupils should read the sections in the book, perhaps in the order in which they appear, because of their need for gradual vocabulary development and for a systematically planned program of skill development. This being the case, how then may she fit the basic reader into her program in ways which are interesting to children and in keeping with modern psychology and philosophy?

There is no reason at all why each reader topic may not be developed as a subsidiary center of interest, running along at the same time as the large unit and perhaps at the same time as other subsidiary centers of interest which have nothing to do with the topic of the reader unit. In other words, there is no reason why the psychology of unit teaching may not apply to the topics of the sections in the reader. Some of the techniques generally used to stimulate interest in general

social studies and science units may well be used to stimulate interest in, and build background for, the topic of the particular section of the reader which the children are about to read. If desired a limited amount of construction work or language, art, and music activities may accompany the reading of stories having to do with the section topic; at the conclusion of reading the stories of a particular section the children may engage in some simple culmination which will make a satisfactory climax to the study of the topic in the reading unit.

This reading unit as indicated previously may be carried on as a subsidiary unit at the same time that a large social studies or science unit is in progress. The modern teacher realizes that her chief function in teaching children in the elementary grades is not to confine them to the acquiring of exhaustive stores of information about some one or two themes within a semester or a grade, but rather to provide them with broad and varied contacts in a large number of fields in order to develop a multitude of permanent interests which will carry over after they leave school and cause them to continue to enhance their many-sided development throughout the years of their entire existence.

With this philosophy in mind we find that many elementary teachers are encouraging the furtherance of several interests in their respective classrooms which run along simultaneously; some one or two of these interests will be very prominent at one time and the others more or less in the background; then again those which have been in the foreground will recede considerably (usually awaiting some new development or impetus) and those which have been in the background will come to the foreground, etc.; but none of these interests are "closed up", they are all permitted to run on as long as it seems profitable to continue them. The topic in each of the successive reading units may constitute one of these subsidiary centers of interest in the total program as it is forwarded at any one time.

As a means of illustration, the activities in a second grade classroom in which the above plan was applied, are described below. In this classroom a boat interest became the center of a large social studies unit which was initiated early in the first semester. This interest called forth many growth-producing activities and was continued from September until early in November. Shortly after this, a center of interest on Community life was initiated, and this subject served as an organizing center for many worthwhile activities until the end of the semester. Neither of these large centers of interest, however, consumed all of the children's school time. They had their daily skill periods, and in addition, they carried forward three subsidiary interests, each of which took precedence over the large social studies unit for a short period of time while excitement over the new interest was claiming the children's special attention. The first of these subsidiary interests centered on shells. One Monday morning Tom came to school with some shells which he had gathered while at the beach. The

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other children gathered around Tom to look at his shells, and the teacher who was interested in shells, told the children many interesting things about Tom's shells. Some of the other children volunteered to bring in different kinds of shells the next day. Thus a collection of shells was started. The children learned the names of the shells, mounted them on plaster of paris plaques, labelled them and thus prepared an exhibit which grew continuously throughout the school year, although it did not interfere at any time with the furtherance of any of the major units.

Shortly before Christmas another subsidiary center of interest developed in connection with Christmas plans. Making Christmas gifts and preparing for a Christmas program to be given for the entertainment of parents claimed the major attention of the children for several days.

After Christmas, Sally, who had become interested in stars, perhaps by hearing the story and looking at pictures of the Three Wise Men, came to school telling about the constellations her father had shown to her. She was particularly interested in "The Big Dipper" and told the other children where to look for it. The teacher encouraged this interest which led the children to make individual "Star Books" in which they drew representations of some of the constellations and recorded what they had learned about them. While this interest yielded valuable learnings, it did not interfere with the completion of the major Community unit, which ended in a program at the close of the semester.

So much for major and subsidiary centers of interest as they were forwarded in this second grade classroom during one semester. These centers of interest, it will be noted, were drawn predominantly from the social studies and science fields. Now, what about reading? These children, of course, did a great deal of Free Reading during this period. They also did as much Applied Reading as it was possible for them to do in connection with their centers of interest, but quantities of the available materials on these subjects were "above the heads" of the pupils. So the teacher wished to provide them with definitely organized reading instruction to build up their reading skills as fast as possible. About twenty of her pupils were ready to begin skill reading at the second grade level, so she began planning how she would use the basic second reader with this group. Upon examining this reader, she found that like most present day readers it was divided into sections or units, each of which dealt with a certain topic. The first section dealt with pets, the second with children's work at home, the third with airplanes, the fourth with community life, the fifth with seashore experiences, the sixth with farm stories, and the seventh with circus stories. There was only one of these topics in the reader which dealt with the same topics as one of the major units which the teacher had planned, this was the section dealing with community life. The teacher decided to have the children read this section in their reader at the same time in which they were building their center

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of interest about community life, thus tying up the basic reader to the major unit during the latter part of the semester. (Since this basic second reader was planned for use during an entire year, not all of the sections were to be covered during the first semester.)

The teacher next planned to develop each of the other first semester reader topics--pets, children's work, airplanes--as little subsidiary units comparable to the shell interest, the Christmas interest, and the star interest, except that work in connection with these topics would consist largely of reading activities, and would, of course, be confined almost entirely to the period set aside for skill reading.

In introducing the topic of the first section in the reader, that of pets, the teacher built up background interest by posting pictures of pets on the bulletin board, inviting the children to bring in snapshots of their own pets, and asking them to tell anything of interest which they wished to tell the other children about their pets. The teacher also told a story about her own pets, managing to weave in many of the new words which she knew the children would need in their reading of the first unit in their basic reader. As she or the children used any of the other new words, she placed them on the board in manuscript writing, so that the children might associate the symbols with the spoken words. The teacher also read some pet stories to the children.

When the teacher thought that the interest was sufficiently stimulated, and that the children had some familiarity with the verbal and printed forms of many of the new words which they would meet in their reading; then she introduced them to the new book, the first section of which dealt with pets. The stories were read and sometimes reread in accordance with various and purposeful procedures, such as those suggested in this chapter. The children continued to bring in pet pictures and to talk about their own pets. Some of them made up some interesting pet poems. During the construction period while most of the children were working on a large boat to be used in the major social studies unit, some of the children painted or modeled pets. Thus, the reading interest flowed over from the regular reading period somewhat, but not enough to interfere with the furtherance of the social study or science units which were in progress at any one time.

Each successive section of the reader was treated in the same general way--building upon the basic philosophy of modern psychology and philosophy, but still using basic materials definitely and systematically organized in developing a hierarchy of reading skills.

The other twelve children in this second grade room were of first grade ability, so they proceeded to cover a basic first reader during the period set aside for that purpose. The teacher built background interests and guided fascinating activities connected with each topic treated in their first reader during the regular reading period, just as she did with the other group who was reading in a second reader.

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In both cases, of course, the children didn't devote all of every reading period exclusively to reading. Two or three of the reading periods, perhaps, were devoted to the building of background before each new section in the reader was undertaken. Upon other occasions time was given over to the discussion of personal experiences having to do with the topic, planning to give a reading program to another class, or planning to give an exhibit of a collection of pictures having to do with the topic, or to summarize the information in a booklet, or to climax the reading unit in some other attractive or satisfying manner. Thus it was that Developmental Reading proceeded through the use of purposeful, interesting, growth-producing activities.

In conclusion it might be said then, that Applied Reading, Free, Unapplied Reading; and Developmental Reading all have a place in the Activity Program; that if properly guided, there need be no conflict between any of these types of reading and the basic psychology and philosophy upon which the activity program is founded.

## READING: THE EDUCATIVE PROCESS

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No more pertinent problem can be faced by this conference than that of engaging in a serious investigation of the nature of the reading act. Few will question that the problem of developing efficient readers is a basic problem for education, but it seems likely that we can find little agreement as to what an efficient reader is like. Like many social and moral issues, this one appears to be understood and acceptable in general but it is intangible and almost indefinable in the particular.

Throughout the years varying attempts have been made to affect the teaching of reading. The trend may be indicated by a sequence of titles of books which have been published with that regard. For example, in 1916, Kerfoot presented a book with the general title, How to Read. By 1929, the general coverage was somewhat restricted by Pitkin's book, The Art of RAPID Reading. Then in 1935 Wrenn and Cole seem to have sensed that more than speed was involved in efficient reading. They published a treatise instructing How to Read Rapidly and WELL. The preceding titles do not indicate that any particular stimulus is to be read. In so far as the statements are concerned the contents may have referred to any application of the reading act. In fact, Kerfoot makes the pertinent point that "reading is a mode of living." However, by 1940 Adler focalized attention upon a much restricted problem when he wrote on How to Read a BOOK. Now in the current year Richards has just published a BOOK on How to Read A PAGE.

If this trend were to continue, we ought now to address ourselves to the problem of How to Read a Paragraph. Later we might consider, How to Read a Line. Then we might investigate the reading of a phrase and finally the reading of a word and a single letter symbol. It is needless to point out to this conference that each of these items has been studied and reports of such investigations already are found in the professional literature. It would seem, therefore, that the field of reading has been mapped, divided, and developed according to our most approved methods. But your presence in this conference and the presence of thousands of other people in numerous conference centers throughout the land suggests that we are not altogether satisfied with the harvest. Something definitely is wrong because the production of efficient readers is still the most baffling problem faced by educators, and that is in spite of the fact that more research has been directed toward solving it than has been given to any other aspect of educational concern. In the light of such conditions it behooves us to examine carefully the basic concepts of our strategy and to study the appropriateness of our equipment and techniques.

As one studies the literature concerning reading, one is struck by the dearth of consideration which has been given to the nature of the process. Few writings or research reports contain any formal statement concerning this matter. It is not difficult, however, to sense that the

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major concern of the discussions is the act of reading printed word symbols. In other words, the process of reading has been identified and defined in terms of a special type of stimulus. It is true that there are occasional references to the reading of pictures, of maps, charts, diagrams, statistical tables, and other specialized forms of symbolic expression such as music and number notations. There are even instances which indicate that faces are read, that fortune tellers read palms, and tea leaves, etc. However, these constitute a minor altho extremely significant variation from the central theme of concern, the reading of printed word symbols. Hence, the issue would have been more clearly presented had Kerfoot titled his book, How to Read Printed Word Symbols. Certainly that is true of the treatises of Wrenn and Cole, and it is even more true of the works of Adler and Richards. The problems which they discuss are set by a particularized form of stimulus. The stimulus itself has no intrinsic basis in the world about us. It is a peculiar thing the nature of which we are just beginning to sense.

Programs for instruction in reading have been built upon that narrow conception of the reading act. Therein lies a probable explanation of the inadequacy of reading instruction in the schools. Evidence of this may be secured thru the analysis of some of the concepts which are utilized in constructing the instruction procedures. For example, it has been commonly stated that reading instruction should begin in some specified grade or at some specified maturity level. This idea implies that experiences which precede the introduction of systematic instruction in reading printed word symbols are not reading experiences. They have sometimes been designated as "pre-reading" training.

Again, there is the assumption that in the early years of schooling children should be taught to read with such proficiency that their later experiences will not need to involve such instruction. This has been carelessly expressed as follows, "During the first four years they should learn to read and thereafter they should read to learn". This idea is so patently erroneous that it scarcely requires evaluation, but it is essentially the concept upon which much of the school work is based. Those who train in the so-called "fundamental reading habits" are exponents of this plan.

A third concept which has affected instruction in reading development is the idea that thoughts reside in printed word symbols. Pupils are enjoined to 'extract' the thoughts from the printed pages. This idea is behind many of the reference book assignments that are made. It essentially is the basis for the textbook requirements of which so much is said. It is an extremely dangerous misconception because it seems so apparently reasonable. We admit that words are merely symbols for ideas, but we tend to disregard the significance of that relationship and to treat them as tho they were ideas themselves. Symbols of things are not the things. Consequently, the symbols have few or none of the cues to meaning which are characteristic of the concrete things symbolized. Ideas cannot be extracted from symbols because the symbols are not ideas. The conception that such an extraction can be made might be termed the

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cider press conception of reading. Juice is a part of the concrete object, apple. By means of an appropriate press the juice may be separated (extracted) from the remainder of the apple, and it can then be treated in its own right. Juice can be obtained from the apple, but, as yet, we know of no way by which it can be extracted from the symbol of an apple. Only in a very limited and special sense is it possible to 'extract' meaning from a symbol. Hence, educational practices which are based upon that idea are based upon a very slim chance of success.

Another of the ideas upon which reading instruction has been based is the idea that the development of a proficiency with reading printed word symbols utilized in one field of regard can equally well apply in any field where printed words are used. For example, teachers of science and mathematics are sometimes annoyed because the teachers of English have failed to develop efficient readers of science and mathematics materials. The assumption seems to be that all fields are presented thru printed word symbols, and consequently a really good reader can read them equally well. Hence, the conclusion is that the teacher of English should teach pupils to read. Then the teacher of history can teach them the ideas peculiar to the field of history; the teacher of physics can teach them the concepts from the field of physics, and so on thruout the curriculum. It does not seem to occur to the followers of this view that learning a symbol without learning the idea for which it stands is wasteful if not actually futile.

Thruout our literature there occur references which indicate that reading is thot of as behavior which is activated by other stimuli as well as by printed word symbols. For example, in an extremely pertinent editorial, Ann Bryan McCall asks in The Woman's Home Companion "How Well Can You Read?". She presents human behavior as manifesting "signs" and "symbols" which represent definite meanings, and asks "How well do you read them?". She states the task of reading as being threefold. One must read one's self, other people, and things. It is evident that McCall's conception of the reading process is something very different from that which prevails in the literature treating of that field. However, hers is not as uncommon a conception as at first appears. Webster's dictionary gives several illustrations from recognized authors which indicate that to their minds reading is a behavior process which occurs with many forms of stimuli.

Suppose, then, that we evaluate the current programs of instruction in reading to see what suggestion for improvement we may find. First, we shall note that in educational practice, reading is treated as a specialized mode of responding to a particular form of stimulus. Actually education is concerned with many forms of stimuli and there are programs of instruction with regard for them, but rarely, if ever, have those programs been conceived to be unified and all of them thot of as reading. Second, it seems evident that by restricting the concern for reading development to focus so specifically upon the behavior with printed word symbols, there has been too little use made of the other forms of reading. Symbols are not read efficiently when readers do not

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possess the concepts which the symbols represent, or when the concepts are known but have not been associated with the symbols used. Things and relationships among things must be read in their own right in order that the reader may develop meanings to project to symbols about them. Third, the usual program for reading instruction disregards the physiological and personal phases of behavior. In order to read printed word symbols visually one must use one's visual sense. Few programs for reading instruction have considered the developing of visual ability as an integral part of that program. Similarly, behavior is best performed when the behaving individual desires to make a good performance and when the individual is freed from embarrassment and other inhibiting factors. Too many programs for reading instruction fail to impress the students as being crucial or significant. Too many contain aspects which embarrass or inhibit efficient learning.

Most of these criticisms are resultants from the fact that the nature of the reading process has been improperly conceived. Consequently, their correction will demand a change in that conception. Reading is the procedure thru which any stimulus is received, interpreted, and appropriately responded to. It is the process of making a discriminative response. The response must be discriminative, i.e. purposefully adapted to fit a sensed stimulus.

This discussion does not specify the intrinsic characteristics of the reading process. It merely indicates that reading occurs with many kinds of stimuli. An adequate program for reading instruction must, therefore, include more than one stimulus form.

Reading, in this basic sense of the term, refers to conscious behavior. As a process, therefore, it is as native to human behavior as is consciousness, or digestion, or even cell growth. As a process, it is not initiated in schools or by school procedures. These merely activate, direct, and facilitate its occurrence.

Reading is experiencing. Consequently, in a technical sense there can be no such thing as "pre-reading experience." Reading is the process of adaptive behavior. Hence, there can be no such thing as a "non-reader" except as the reader is not aware of the stimulus.

Reading is the essence of the process of educating. Instruction programs should be constructed, first to activate the process to a functional stage of performance with regard for particular stimulus situations. Next there should be provided appropriate criteria for evaluating adjustments together with proper facilities and motives for their efficient culmination. Educationists have sought the core of the curriculum. Some have identified it with social studies. Others have associated it with science. Few have felt convinced that such a core is logical and administratively sound. No single area of regard is of such universal importance that it can properly be given that position of primary concern. However, reading, as we have conceived it in this broad and inclusive sense, does serve to implement the demand for ex-

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plaining the unity of behavior. All teachers are teachers of discriminative behavior. Some are concerned with directing the behavior toward a more thoro knowledge of one's self. Some are concerned with focusing it toward a more appropriate response with regard for other people. Some direct behavior for adaptations with regard for things. Fields of concern are differentiated on the bases of their focal matters of interest. The procedures for securing mastery within different fields are essentially similar. This similarity of behavior is the evidence of unity. Upon it valid educational practices can be developed.

Reading, i.e., discriminative behavior, may involve highly specialized technics and skills. However, the accomplishing of these same technics and skills involves the process of reading. Hence, we see that it is impossible to characterize the act by the statement, first you must learn to read and then you can read to learn. Reading is involved in learning how to read any particular thing, and reading is involved in determining the characteristics or functions of that thing.

The present major concern in reading instruction is with the reading of printed word symbols. This is really a minor problem, and its development is dependent upon the achievement of relatively high accomplishments with other situations involving reading. The reading of symbols, since it is derived from and dependent upon the reading of the thing the symbols represent, may properly be called a secondary form of reading. The reading of things, processes, relationships, etc. in the concrete may then be termed primary reading. These terms are pertinent whether we wish to refer to the time-space factors or whether we refer to the relationship of fundamentals and derivatives. The reading of things must precede, and it is a prerequisite for the reading of symbols for things. Time will not permit a thoro development of that theme at this meeting. It is fully worthy, however, of a more extended consideration. In the few remaining minutes we shall be more specifically concerned with some aspects of the process of reading printed word symbols.

The first step in this process is the reception of the stimulus. In this step there is a partnership of lighting and vision. Considerable progress has been made with the matter of lighting for efficient reading of print but that problem still has need of attention. The other partner, vision, needs even more consideration.

The distinction between organic structure and function must be emphasized. There are many who have eyes, yet see not or having ears they do not hear. Not long since many students of remedial reading sought for the cause of reading difficulty in the area of simple visual deficiencies. They were surprised to discover that the customary ideas of what constitutes a deficiency needed to be changed. Far-sightedness may interfere with efficient and comfortable near-point seeing while near-sightedness very often facilitates it. Each of these conditions is termed a visual deficiency. Each affects the clearness of certain conditions of impression.

In like manner the ability to form a single impression from the impressions thru two eyes may be performed with facility or with varying

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degrees of difficulty. Many factors affect this ability. Its operation is partially a matter of learning and partially a matter of the conditions of organic metabolism and growth. Within limitations each of these factors is amenable to treatment and each is a part of the reading instruction program.

Finally, seeing is a creative process quite as much as it is automatic and mechanical in nature. Perceptions are more than mere physical, mechanical responses to stimuli. They clearly illustrate the psychological principle that the whole can not be explained as a summation of parts. Perceptions as well as conceptions are personal. They are created by individual perceivers. The process of creation does, however, have some definite and measurable aspects. When the visual process is involved, it is important that it function with efficiency, facility, and comfort. In order to secure this it has been demonstrated that nutrition, physiological, and ideational factors may need correction. Proper diet is as much a part of a reading instruction program as are the textbooks. Glasses may be of greater importance than are supplemental reference sources. Teaching how to see may be a fundamental part of the program for teaching how to read. Making possible the recall of ideas may be fully as important as is their original formation. The reader is important to the reading program.

Much has been said concerning backgrounds of experience in treating of the educational process. They are important. They are the "stuff" from which the perceptual process may 'extract' or 'abstract' concepts. But current treatments of the subject appear to be distorted and erroneously based. Background implies foreground to give to position. Similarly, in education, i.e., with the reading process, foreground is necessary to give the direction and determine the potential of the process. Purpose, motive, interest, goal are some of the symbols which have been used to refer to this condition. It deserves greater consideration in planning and administering programs for instruction. Too long we have been pushed to educational achievement by the force of "past experience". We read with goals in mind and goals are distinctly future in their reference. In the reading process at its advanced stages, at least, selection is made among the recalled concepts according to the purposes which are affecting the reader at the time of his reading. The past is of no greater importance than is the future. Reading is a dynamic and creative process. It operates in a controlled pattern directed by a multitude of factors but it is not random and its energy is not entirely push.

Reading is the process by which educating occurs. It should not be defined in terms of any particular form of stimulus, but the specific nature of the skills and procedures needed to read particular stimuli should be considered. The reading of printed word symbols is an extremely important application of the more fundamental reading act, but it must not be thought of in isolation from the other and more primary forms of reading upon which it depends. One may not achieve an education solely thru reading books. One must have concepts to project to the

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symbols which are recorded in the books. Some time along the line, the creation of those concepts required direct experiencing.

The Claremont Reading Conferences have been dedicated thruout their existence to exploring the implications of this concept. It is still the most important aspect of the problem which we have met to discuss. The schools have to a considerable extent created difficulties with their programs of instruction because they have formulated misconceptions of the nature of the tasks to be accomplished and then they have devoted practically all their attention to implementing practices based upon those misconceptions. It will be profitable to take time to examine the original basis for the practices. Reading is not an isolated skill. Reading is the process of behavior wherein discriminative adaptation is the goal.

## ORCHESTRAL TECHNIQUES FOR SCHOOLS

Lamar Stringfield, Juilliard School of Music, New York

In dealing with the many new problems that are confronting musical interests and activities of the present day, and possibly some kind of future, it is probably best to approach a general attitude of simplicity that is based on the structure of a definite but simple truth. To most people, advanced orchestration is a complicated affair, in reality the more advanced the orchestration the more simple in structure it is liable to be. For instance, Wagner didn't know as much about orchestration as we know today and it is for that reason that his orchestrations in many cases were absolutely impossible to play. The "Afternoon of a Faun" by Debussy, may illustrate well a simple structure of orchestration which is both practical and effective.

In turning to the technique of orchestration for schools, we might consider that each part for each instrumentalist be written in such a way as to encourage and stimulate the individual player to solve any technical or tonal difficulties that might be included in that particular composition. There are many difficult orchestrations so far as performances are concerned, but many of them are not of a musical calibre that justifies a very consistent approach of technical development to perform them. One of the best illustrations of exaggerated possibilities of an orchestral technique is the orchestral number "Til Eulenspiegels" by Richard Strauss. The music is of such a nature that it seems to command the respect of the player, regardless of its technical difficulties; but I have an idea that Richard Strauss would have written those even more simply if he had known as much about orchestration as we do--or that we should know today.

In speaking so much about the technique of the orchestrations, not in reality the subject of this talk, which is to be orchestral technique for schools, I think of it in terms of the orchestral understanding of orchestrations and compositions as being a pre-requisite to any leadership in overcoming any technical difficulties in rehearsing or teaching young orchestras. With the thorough knowledge of the simplicity of advanced orchestration, all of the simplicity in orchestration technique--whether it be for professionals, amateurs, or student orchestras--can be tremendously simplified in its reality. In other words, if we will just realize that there are very few subjects in this world that supply the general use of our human needs that are of a complicated structure.

Among the most useful bits of information which can be imparted towards a more thorough understanding and usefulness of a subject, is to open your mind, ask questions without hesitation--regardless of how stupid they may seem to be--and relate all of our home lives and school lives with the characteristic environment of our own country, or of our own country's subjects. By this it may appear--and it is definitely intended to appear thereby--the highest recommendation that our

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first major thought in music should be finding out what we have in material, as to compositions and talent in our own country, and utilizing them to the fullest degree. In this way it will be found that there are not too many subjects foreign to the student which may unnecessarily complicate his attitude towards music. The music of our country and, after this war, the music of the whole world will be absolutely dependent on what we in this country develop from our own birthrights. It will be America--and America will form a leadership for all music, and other cultures, if we actually use our common sense and judgment and utilize the very rich and vast materials which we have constantly at our command for merely the opening of our minds to a very simple reason.

This is not intended as a document infallible or complete, but is a suggestion that we have a tremendous but interesting task in front of us to live for rather than merely to sit back and live on the past.

If we will remember that it is less stupid to ask stupid questions than not, there may be a valuable medium established whereby our open minds may become a treasure of vast wealth which in turn can be of great value to our home problems, to this world, and to our fellowmen.

## EXPLORATION OF THE WORLD THROUGH READING

Justine Van Gundy, Stockton Junior College

To the average college student today the world he lives in seems indeed 'a world I never made' ! He is bewildered, sometimes resentful, more often fatalistically acquiescent as he feels himself pushed on by forces beyond his control toward a future fate which seems to hold little promise for his personal achievement and happiness even if he is allowed to survive. The fears of Archibald MacLeish, Mortimer Adler, and others that he would prove to be too soft and undisciplined for the needs of modern warfare, we now know to be contrary to fact when the harsh necessities of the times actually challenge and confront him. We are no longer worried about modern American youth as soldier--we have reason rather to fear for him as John Doe of the post war world. We may question whether or not he is in grave danger of remaining the automaton that war makes of him, carrying over into his personal life the emotional and intellectual attitudes of unquestioning acceptance of authority and regimentation to which military life has conditioned him. Here, we as teachers have the responsibility that must be met now if we are to be in a position to assume it later. If the utilitarian emphases of the war time emergency are allowed to dominate our post war curricula, may we not find that the skills of welding and riveting have permanently replaced the skills of intelligent, thoughtful reading, the study of languages, of the arts and all subjects other than those that can be proved to have an immediate utility? Unless those of us who view the humanities as functional in the most real sense of the word can keep alive a recognition of their values, the subjects that have to do with the means of life will crowd out those that point rather toward ends in terms of rich personal and social living.

It is, one hopes, less that we wish to survive as teachers of English or other traditionally cultural subjects than that we want those human values to survive for which the humanities have stood, that we must now face the challenge of making a generation of doubting Thomases--not only in the classroom but on the school board--aware that we have something to offer. We must persuade them that we can actually help young people to find meaning in the present chaos and hope for the future--for this, whether they recognize it or not, is the quest of youth today.

The reading program I shall outline holds this as its objective, a goal admittedly too ambitious, necessarily limited by human factors on both sides of the desk, as well as by the physical boundaries of a course described as a one semester introduction to literature. The focus of the course we have made the concept of the dignity of the individual human being, the factors that deny and the factors that contribute toward its realization in a democratic society. Because we hope to tie all considerations of the social problems men face today to the need for individual enlightenment and growth, we begin by reading about various ideals and schemes of education, from those of Newman and Huxley

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to the plans of President Hutchins and various modern educators in experimental colleges such as Sarah Lawrence, Bennington, Antioch, and Rollins. Much of the material is necessarily journalistic, but we supplement this survey of ideas by reading from a group of short stories and biographies. Lincoln Steffens' criticism of the whole system of 'mind-fixing' by which students weekly learn what they have to learn for the purpose of passing affords an excellent introductory selection to arouse the questioning attitude it is our chief desire to foster. The students are encouraged when Steffens tells them "nothing is done. Everything in the world remains to be done or done over. The greatest picture is not yet painted, the greatest play isn't written (not even by Shakespeare), the greatest poem is unsung. There isn't in all the world a perfect railroad, nor a good government, nor a sound law".

A story by William Harlan Hale called "Mr. Minnow in Trouble" tells of a young teacher whose questioning of the idols of the stadium and the market place led him into conflict with authority. Milton's concept of the grappling of truth and falsehood in free and open encounter is so painlessly insinuated into this story that two freshmen were actually interested in investigating Milton's social role in an age not unlike our own in its challenge to freedom of thought and expression. Others were intrigued by the quotation from Whitman which seemed to corroborate Lincoln Steffens—words which might be considered the text for our course:

You shall no longer take things at second or third hand, nor look through the eyes of the dead, nor feed on the specters in books,  
 You shall not look through my eyes either, nor take things from me,  
 You shall listen to all sides and filter them for yourself.

Hale's story has less value as literature than it has as a readable and entertaining piece of fiction which serves to open up many avenues for future exploration.

Something of the same purpose is achieved by Sinclair Lewis' "Young Man Axelbrod". Here again the student sees that the desire to know may lead one into conflict with social mores, even on the campus. Class papers written on the college non-conformist suggested that for a few at least the passing sympathy with one who was different from the crowd might carry over into a broader tolerance of the many individuals who compose a student group. At the same time that the student was led to see the various ends and means of education in a democratic society, he was introduced to fascist attitudes toward free investigation of truth by collateral reading of Beard's "Education Among The Nazis" and Erika Mann's "School For Barbarians". The question of reasons for Nazi burning of the books was brought up and the suggested problem of deciding who among American authors would be banned by Hitler was informally carried through the semester's reading and helped to focus the meaning of democracy and its relation to the arts and sciences.

A logical step from these general problems of education led us to

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a consideration of philosophic ideas of liberty and democracy, necessarily brief and suggestive only, for we preferred to stress democracy in action as one finds the theme in fiction and drama. Elmer Rice's "Street Scene", Jo Pagano's story, "The Disinherited", and Maxwell Anderson's "Winterset" have in common the problem of young people caught by social and economic forces that seem beyond their control, attempting nevertheless to build lives of personal and social usefulness. The factors that frustrated and defeated the struggling individual were set over against the qualities of integrity, courage, and idealism revealed by Rose in "Street Scene" and Mio in "Winterset". The too facile and often repeated assertion that "it's all a matter of will power"--that one who fails is just "weak"--was challenged by Bill's persistent efforts to make a place for himself in the depression era, and even the most dogmatic member of the class was finally inclined to agree that successful democratic living involves a balancing of complex inner and outer forces for which society as a group must assume some responsibility.

For man must have security, the feeling of belonging, O'Neill reminds us in "The Hairy Ape". A society that denies to even its lowliest the sense of contributing to its needs runs the risk of unleashing destructive forces for whose violence many may suffer. While Yank could believe in the dignity and value of his work as a stoker, while he could identify himself with the power that moved the great ship, he was a happy, useful member of society. When he was confronted with the realization that to some he was less than man, a 'hairy ape', a creature to be scorned and feared, the shattering of his self respect and his feeling of belonging to a group brought about a complete disintegration of his personality, a regression to the beast.

This same theme was traced through "The Grapes of Wrath"--man detached by vast impersonal forces from the work, the people, the land in which he had his roots, to wander from place to place in quest of a home--no less for the needs of his spirit as self respecting individual in society than for the physical needs of his family. It was interesting to discover that this novel does not lose its power to evoke violent personal reactions which in some cases were modified as we traced through the book a record of man's struggle to be man, not automaton. "I've always hated the Okies", one girl frankly declared. "We used to have them on our ranch, and mother always told my brother and me to stay away from those dirty children or we might get awful diseases. But now I can't see them without wondering just what I would be like if I had to live the way they do." And when later we took our class poll of American authors who would certainly be proscribed in a Hitlerian state--lo, John Steinbeck's name led all the rest! Since we had built up this fate as the highest honor that could be accorded a writer for his defense of the human values we cherish in a democratic society, the choice by a group of somewhat prejudiced Californians seemed an especially significant one.

From the literature treating of domestic social problems we turned to a larger consideration of problems of war and peace and the building

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of a better world. Because so much of the more important literature in this field is focused on the barbarity of war, the problem of selection at the present time was extremely difficult. Without chauvinism, certainly without glamorizing warfare, one feels that he must nevertheless try to give these young people, for whom war is now a personal and imminent reality, some recognition that one may at the same time hate war with all his being and yet as a free man choose it as the only means of securing a world which values the individual man and his right to remain free. Karel Capek's "R.U.R." and Sherwood's "Abe Lincoln in Illinois" were chosen as plays which would bring together many of the strands of our reading and with a timeliness of approach enable us to consider the problems of men in a scientific world, the effects of mechanized warfare, the relation of the individual to the larger social group in an era of violence and social change.

The theme of "R.U.R." is doubtless familiar--the story of Rossum's Universal Robots, invented by scientists as efficient working machines, like men, enormously developed in intellect, but without the feelings or aspirations of human beings. All is well until the robots, improved and sensitized, are awakened to the desires of men, their passion for power, and turn upon their masters in deadly mechanized warfare, the creature destroying its creator. Only through the flowering of the new robots' sensitiveness into love and a capacity for suffering and sacrifice are we given hope in the end that the best of the world we have known may still have power to perpetuate itself and to evolve into something finer. The symbolic parallelism to our world today was apparent even to the least imaginative in the class. With considerable excitement they found prototypes of our contemporary dictators, our scientists, and industrialists, our visionary idealists and our universal robots, struggling to achieve their individual goals of happiness, creativity and love in a world of vast impersonal forces.

When "Abe Lincoln In Illinois" was announced as our final play one girl said, "Oh, I'm so sick of hearing about Abe Lincoln. Do we have to read that play?" I suggested that she might find Robert Sherwood's interpretation rather different from some of the conventional portraits--that just possibly she might find that young Lincoln, facing the prospect of war and the conflict of democratic and anti-democratic ideas, has much in common with thoughtful young people in the world of today. The uncertainties of the youthful Lincoln, his inner conflicts, his early 'live and let live' policies, his unwillingness to pursue a course of action until he is convinced that it is right and inevitable--these are qualities modern college students can understand. The metamorphosis of this Hamlet-like young man to a man of passionate conviction and decisive action, linked as it was with his growing awareness of the meaning of democracy proved a fascinating study to the majority of the class. They saw that his philosophy was grounded on a simple realistic belief in the rights of the individual, that he opposed courageously whatever was incompatible with that belief, whether it was in the cause of free men in Hungary or of black men in the south. Fighting the isolationist forces of his day, the upholders

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of special privilege, the advocates of racial discrimination and class hatred, he spoke always "not as a representative of any one faith or class, but as a member of the whole human race. He was forever conscious of the obligation of all Americans to their brethren in all other lands--to 'the Liberal party throughout the world'--to make the democratic spirit live and grow". The dramatic representation of these aspects of Lincoln's character seemed to throw new light not only on the national hero of whom young America had grown a little weary, but it afforded opportunity for striking parallelisms in which the students manifested great interest. One boy made a thoughtful study of Lincoln in literature, a girl came to the defense of Mary Lincoln in a spirited paper, and another student worked out a rather ambitious comparative study of the evolving personalities of our war presidents, Lincoln, Wilson, and Roosevelt as they embraced the necessities of a war situation.

A number of times during the semester we had a round table discussion led by a class appointed chairman, in which we tried to bring together ideas from our reading, evaluate them, and apply them to current conditions. I should like to conclude with a rather literal transcription of part of our somewhat random discussion on the general topic of social literature, its value in time of war and peace. The leader raised the question: Are these writers making us aware of the values of democracy, the means of achieving it, the forces that may impede it?

James: We've been talking mostly about people in this class, not about words like democracy. Don't you think we should just consider democracy as a means to an end--and the end as happy people in a free, happy society?

Leader: Do you mean we must abolish class consciousness if we are to have any real democracy that is worth fighting for? It seems to me many of the writers lead us to this conclusion. But how can it be done?

James: Well, certainly plays like "Street Scene" and "Dead End" show what young Americans may grow up to be if we don't see to giving everybody a chance, if we don't do away with slums and see that people have work and decent living conditions. And "Winterset" even more shows the danger of discrimination against people who are not like us because they haven't had our opportunities. I think some very practical things could be done to better conditions for young people growing up in our cities.

Betty Jean: Oh, I'm tired of hearing about the awful conditions the slum people and the Okies live in. Certainly the war has changed all that. Everyone who wants to can get a job now.

Ed: That's true, but we have to think about what will happen after the war. They say war is a great leveller. Probably all these people who have had good jobs for the first time won't want to go back to

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living as they did before. Then what?

James: That's just where I think literature like we've been reading can help us. It can make us understand what we are doing to people, to their self respect and their dreams, when we give them jobs only when we need them to save our own hides. We have to change a lot of things right now if we are ever going to have a real peace.

Betty Jean: I think that we are too self centered to do anything like that. We think now we'll do things differently, but you know perfectly well everybody is thinking about himself and his family and not worrying much about the country as a whole or the world so long as it lets him alone.

James: Yes, but isn't that just what it won't do? Just like Lincoln found out, and everyone of us is finding out today. And we've got to see beyond our own noses if we want to live. That's where it seems to me education comes in. We ought to have been made to see all this long ago.

Ed: But it all seems pretty hopeless anyway. After all, not enough people read anything that helps them to understand what's happening in the world.

James: That's why I think popular literature and the movies could do a lot more than they do. Literature can certainly help us to understand people better and to make us want to improve the conditions men live under.

Leader: Do you think that is because good writers make us feel that man is important and that the way he has to live may destroy his feeling of importance?

Ed: Yes, that's just what we see happening to Bill in "The Disinherited". He is a college boy with ambitions and hopes just like ours, but we watch him losing these ambitions and becoming an ordinary hobo when he can't get work.

Betty Jean: Oh, he just hadn't any character. He was weak. Look at Mio in "Winterset". He wasn't beaten by hard luck.

James: Wasn't he? I think in the end he was defeated just as much as Bill was--only we saw more of the fight he put up, and with Bill the author just told us about his struggles, so we weren't convinced.

Ed: But sometimes the characters did get out of almost hopeless situations and make something of themselves. In "Street Scene" Rose gets out, but Sam wants to and probably never will--he is just not strong enough.

Leader: Maybe that's where we come in--or ought to--to help those

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who aren't strong enough. I suppose we have to admit that both character and environment are important. That's what Abe Lincoln meant to me chiefly. We saw how inner and outer forces made him the sort of person he was.

Ed: Yes, and another thing he showed me was the need of learning to read and think for ourselves and apply hard, practical sense to our problems.

James: Speaking of Lincoln, one of the things that impressed me most was that he saw that there is a time for peace and a time when we have to fight to have peace--and that's just about where we are in the United States today.

Betty Jean: Oh, that's just a lot of hot air to me! We are fighting because we were attacked.

James: But why were we attacked? Why are all of the peoples of the world fighting when all we want individually is a chance to live in peace? Don't you think we have to get down to the roots of all this trouble today?

Betty Jean: If you mean we lack brotherly love and all that sort of thing--

James: No, not exactly--but maybe I do. I think I mean something like Tom Joad discovered--that we have to think in terms of something bigger than our little selves. Maybe it's other people, maybe it's our country--it might even be a world federation, a whole world living in peace and consideration of the rights of our fellow men.

## EVALUATING THE TESTS OF READING DEVELOPMENT

T. Stanley Warburton, Principal and District Superintendent, Acalanes Union High School, Lafayette, California

A discussion of this topic requires a careful appraisal of the standards used to measure or describe the degrees by which reading ability unfolds. Two mutually dependent questions require answering: first, what is reading development? and second, what are the tests of reading development and how can they be evaluated?

### I. What is reading development?

To take a somewhat extreme position, the fundamental goal of education is the development of reading ability. This position is untenable, of course, if one thinks of reading as pronouncing words in a book or even of limiting reading to getting meaning from written or printed materials. Reading must be thought of in broader terms such as Dr. Spencer uses in defining reading as "the process of making discriminative reactions to stimuli."<sup>1</sup> Reading development requires discriminative individual reaction as a mode of learning rather than being content with the teaching of predetermined, socially acceptable meanings to a restricted body of information.

This concept is not in keeping with the traditional, autocratic approach to American education in which teachers are assumed to know more than pupils; principals more than teachers; and superintendents more than principals. Courses of study are prepared in advance of instruction and, all too often, applied rather ruthlessly. Omnipotent powers are presumed to enable school officials to know what materials are good, what materials are bad, and in what grade "good" materials should be introduced. When inadequacies in the educational program are revealed, more materials are added to the program rather than questioning the basic method and the principles underlying that method.

To educate by developing reading ability is quite a different process. In the first place, this point of view recognizes that every child is reading before he attends school. Schools exist to help students make reactions to all stimuli more discriminative. Moreover, schools can materially shorten the time necessary to experience and develop reactions to those common-stimuli with which any individual should be familiar. Reading development starts with the individual and reaches as far into his environment as interest takes the learner. This does not prohibit group development for the preponderance of likenesses over individual differences means that there will be many types of reactions which the group can well study together. It does mean that there will be clear recognition of the fact that the experiences of each individ-

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<sup>1</sup> Spencer, Peter L. "Principles of Teaching Reading in Secondary Schools." California Journal of Secondary Education, 11:13-16, January, 1936

## Warburton 2

dual, even in a common activity, will be different, and that the interpretation of the same stimuli may differ markedly.

In reading development, one goal is uppermost: The attainment of truth. Much learning will of necessity fall far short of this objective. Teachers and students should be aware of the relative validity, permanence and extent of their knowledge. This suggests the desirability of actual rather than vicarious experiences where feasible, for the second-hand quality of written records introduces a myriad of questions concerning the validity of the report. Supplementary to wider participation in actual experiences should be efforts to purify and make more nearly valid the recorded stimuli which are used for study. This is essential for true reading development and adequate education.

Huse points out that the increase of literacy, albeit a primary step in reading development, is not enough. To presuppose a general distribution of the ability to read and comprehend is a popular modern error. "A consideration of the frauds perpetrated daily on the masses makes it clear that the population as a whole learns little beyond how to sound written symbols."<sup>1</sup> Popular education has brought a deceptive type of literacy which makes possible exploitation of the public on a wider scale than ever before. To safeguard the advances in culture and civilization that accompany more wide-spread literacy, it is imperative to secure reading development in which the individual retains control of action and belief.

The inadequacy of present sources of information is emphasized by Bertrand Russell who states, "One of the most important parts of education, and one of the most neglected, is that which teaches how to reach true conclusions on insufficient data".<sup>2</sup> The teaching of reading will help in this process, for only as students develop the ability to react with discrimination to the stimuli impinging upon them is there any hope for an understanding of the world and the ultimate solution of far-reaching contemporary problems. Reading development is not merely one of the three fundamentals of public education, but is basic to life.

## II. What are the tests of reading development and how can they be evaluated?

Upper elementary and junior high school teachers, for whom this paper is primarily prepared, may well ask if reading development is as broad a field as has been outlined, how can one test progress toward

1 Huse, Howard R. Illiteracy of the Literate. New York, D. Appleton-Century Company, 1933

2 Russell, Bertrand. Education and the Modern World. New York, W. W. Norton and Company, 1932

## Warburton 3

growth in reading? If one will hold in mind the limitless conception of reading development and subscribe to that principle of gestalt psychology which states that the whole is greater than the sum of its parts, he can then safely evaluate some of the tests that have been used to measure various aspects of reading. Care in the administration of tests to guard against distortion of the objectives of reading instruction both by teachers and pupils is important.

Reading readiness tests are among the first type of instruments applied to students by teachers. These tests, crude as they are, do improve the understanding by the primary teacher of the development of basic mental and physical coordinations requisite to the attempting of instruction in reading of written word symbols with reasonable hope for success. Few primary schools would attempt to begin reading instruction until pupils had been tested, results analyzed, and class members arranged into groups which could profit from comparable methods of approach, materials, or goals for attainment. This concept of readiness is valuable for application throughout all learning situations. No upper grade or junior high school teacher should begin reading instruction until she has learned at least the standing on abstract intelligence, reading rate, vocabulary, interest, extent of reading, achievement, and physical nature of her pupils. So-called homogeneous grouping of pupils does not free a teacher from this requirement, for there are no groups that are truly homogeneous in all aspects of reading development. The fact that there are no published tests for reading readiness at the adolescent age level means that the teacher must assemble requisite data from such sources as will be described.

The standardized tests most widely used in upper grades are achievement tests. Multiple choice tests of vocabulary and for selecting the best meaning of paragraphs read are the common methods of measuring reading ability as represented by Stanford, Progressive or similar achievement tests. Further refinements of these instruments are found in tests of reading achievement such as the Iowa Silent Reading Test. Results of these measures are of primary value in comparing whole classes within schools or systems, in which operation their reliability is high enough to be of significance. Despite the great drop in reliability when considering individual cases, these tests still stand as one of the best opening methods for a teacher to use in determining the learning situation to create with and for a given pupil. Other items in addition to reading found in the common achievement test are frequently as valuable in estimating the pupil's readiness as are the items labelled "reading".

Intelligence tests are used in reading programs to determine "native ability" of pupils. With this information divided into achievement scores, accomplishment quotients are secured which aid in grouping students and formulating goals for performance. This method has much to commend it over the use of achievement tests alone or over the use of intelligence tests alone. One danger, however, is that the similarity in content and approach in reading and intelligence tests may

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underrate a student who does poorly in paper and pencil tests of verbal materials. Individual tests with a minimum of verbal bias are essential to arrive at a valid understanding. The fact that recent evidence shows mental ability is capable of change is of significance in this connection.

Diagnostic tests are the third type most commonly used in reading. They have grown from the need to determine specific strengths and weaknesses which may exist. Such tests measure vocabulary, sentence meaning, reading rate, use of dictionary, oral reading ability, silent reading ability, knowledge of alphabet, phonetics, roots, prefixes, suffixes, syllabication, word recall, association, orientation of letters, and other aspects of reading. They go beyond paper-and-pencil tests to the vagaries of eye-movement photography. Skillfully used, these tests offer much in the way of more and more information about increasingly specialized phases of reading.

Prognostic tests are rarely used in reading. This fact is significant, for the assumption that there is less need for a reading prognostic test than for prognostic tests used so generally in placement in Latin or algebra classes is basic to much difficulty in reading instruction. Measures of pupil interest, aptitude, experience, environment, vocational bent, personality and accomplishment may well be used as reading prognostic devices. These estimates enable teachers to anticipate difficulties before they become failures. For normal pupils they permit an outstanding program geared to the pupil's need.

As valuable as all the standardized tests of reading now available are the individual evaluations which teachers make of reading ability. Some of these reflect in the simple instructions given to a pupil after he reads orally for the group. Others are developed in written form to measure the understanding of materials read. Précis writing, sentence analysis, and context setting are tests of the semanticists and can be used both in evaluating work done and as instructional procedures. Informal class exercises such as word meaning bees, cross word puzzles and even "vocabulary bingo" provide test situations from which much can be learned.

On the broad front of reading as discriminative reaction, tests of current information, attitudes, motor skills, aesthetic appreciation and social concern tend to round out the picture of reading development. Work in this area is still in the earliest of stages, but should expand as the reading process is treated as a generic function rather than a specific tool subject to be taught by isolated drill.

In concluding this discussion of evaluating the tests of reading development, certain points should be emphasized:

1. Reading is a vastly broader process than the typical test, text or teacher is willing to admit.

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2. The tests of reading development are varied and may, if wisely used, add much to the effectiveness of a reading program.
3. Measures of reading development should, in the main, be used to determine how to teach a pupil rather than to evaluate how well a teacher has taught.
4. Teachers can contribute to the improvement of instruments and techniques for testing progress in newly recognized phases of reading development.

## EFFECTS OF PHYSICAL DEFICIENCY ON EDUCABILITY

Dr. Curtis E. Warren, Superintendent of Schools, Santa Barbara

In any problem-centered school, that is, where the principal method employed in the teaching-learning situation is the problem method, reading is the skill which is most needed. Since the curriculum in the Santa Barbara City Schools places a great deal of emphasis on problem-solving techniques, it follows that reading receives considerable attention. With the addition of a number of special services during the years 1935 and 1936, facilities became available for the study of a number of problems of educability.

A rather general study of children having difficulty in reading, as shown by their scores on standardized tests as well as their inability to read in the classroom, was undertaken by Dr. Lillian A. Lamoreaux in 1937. Dr. Lamoreaux attempted to study health as a factor in reading. Four groups were set up for the experiment.

Group I. Children with physical defects who were one and one-half years or more retarded in reading. Correction consisted of improvement in physical condition.

Group II. Children with physical defects who were one and one-half years or more retarded in reading. Correction was made through remedial teaching in addition to their regular classroom program.

Group III. Children with physical defects who were one and one-half years or more retarded in reading. This group received neither special attention to health nor special remedial teaching.

Group IV. Children who had physical deficiencies but no reading difficulty.

As a result of her study, Dr. Lamoreaux concluded that:

1. County health records indicated that the entire family of the retarded reader was less physically fit than the family of its successful reader. It also indicated that the retarded reader was handicapped in heritage as indicated by blood tests.
2. The parents of the successful readers were more alert to and informed about the child's physical condition than the parents of the retarded readers.
3. The greatest amount of growth in reading was found in the group having remedial reading correction. The groups receiving physical correction made the second largest growth.
4. The group receiving physical correction raised their intelligence

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scores; however, the critical ratio was not significant. The fact that they raised their scores may merely indicate that the children were better able to read.

5. Retarded readers were found to be more nervous, less even-tempered, and harder to manage in school than successful readers.

As this and other studies progressed, it became evident that the routine mental, educational, and physical examinations were not revealing the fundamental causes of some behavior difficulties and retarded educational progress of a small group of children in the Santa Barbara City Schools. We therefore began to search for an explanation of these apparent failures in diagnosis. Several indications were found that glandular imbalance, particularly that caused by thyroid deficiency, might be responsible for some cases of social maladjustment, school retardation, and impaired mental alertness.

Using these indications as a point of departure, I then began a systematic study of the cases referred to the Child Guidance Center. An endocrinologist was called into consultation and it was agreed to give all children who were referred to the clinic as having problems a thorough physical examination, including three tests for endocrine imbalance. Treatment was to follow each diagnosis of glandular malfunctioning. A few children were given glandular treatments as early as 1935 and the results of the glandular therapy were so satisfactory that it was decided to undertake the work on a larger scale in 1936, and to keep definite records of the progress of the children who had been placed under treatment.

The facilities for the study of children who had problems and were found to be cases of glandular imbalance, were then greatly increased. Provision was made for the taking of careful family and developmental histories. A comprehensive mental and educational testing program was planned and put into operation; adequate laboratory and clinical facilities were provided; and provision was made for giving glandular treatment where parents would give their permission.

During the year 1936 complete records were made of all cases referred to the Child Guidance Center for study. During that year 344 cases were referred, which was 5.1 per cent of the total school enrollment. Sixty-two per cent, or 214 of these cases, were found to have endocrine deficiencies of one kind or another. Forty-seven per cent of the total number referred and 75 per cent of those suffering from endocrine deficiencies were found to be cases of uncomplicated thyroid deficiency. Seventy-eight, or 48 per cent of the cases were classified as having problems of personal adjustment. Forty-two, or 26 per cent, were classified as having problems involving school failure, and forty-one or 25 per cent were classified as having problems because of mental dullness. The total number of endocrine deficiency cases, which amounted to 3.3 per cent of the total enrollment, was slightly higher than that reported by other investigators but this is probably because a

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period of teacher education preceded the final steps in initiating this research and all suspicious cases were sent in for a check up.

Careful family case histories were made for each child referred and a study of these showed that at least one member in a large percentage of the families suffered from some type of glandular disturbance. Endocrine disorders led with 22.5 per cent; excessive height, 15 per cent; noticeable understature, 15 per cent; goiter history, 11 per cent; diabetes, 10 per cent.

The mother of each subject was carefully questioned as to any diagnosed or supposed glandular imbalance during the period of pregnancy preceding the birth of the subject. A much larger percentage of the mothers reported glandular disturbance during pregnancy than would be found in the normal population.

Strangely enough, the homes as measured by the Whittier Home Rating Scale from which the hypothyroid cases came were decidedly superior to the homes of delinquent boys and somewhat better than the homes of unselected children. The fact that good homes contributed a far larger percentage of the cases than did poor homes was contrary to expectations and came as a surprise. Since the children were referred by the teachers and included in the study following a physical examination, it cannot be said that there were more children from the better homes because of greater parental interest in the well being of these children. Time does not permit giving more details on the family histories of this group.

The developmental history of these subjects brought several interesting facts to light. It was found that these subjects began to show the effects of thyroid deficiency in early infancy. They held their heads erect two months later on the average than the normal child; they cut their first tooth one and one-half months later than the average child; they talked two and one-half months later than normal children; and they walked 1.63 months later than normal children. The average amount of bone retardation at the time the subjects were admitted to the endocrine clinic was approximately two and two-thirds years. Retarded genital development was found in 56 per cent of the cases who were twelve years of age or older. The average hypothyroid boy is on the average one grade retarded in school. When the group was divided into retarded and non-retarded, it was found that the average amount of retardation was 1.6 grades, while the average amount of acceleration of the non-retarded group was .37 grades.

A survey of the statistics tabulated from the family and developmental histories indicates that the hypothyroid child is handicapped either by heredity or by environmental factors at birth. This developmental tempo of the subject is slowed down, probably in direct proportion to the degree of thyroid deficiency. In the early years this is only observable in the structural development and gross bodily behavior of the child. It is not until later when mentality per se begins to

## Warren 4

emerge that the effect of thyroid deficiency in mental development can be observed.

A battery of intelligence, achievement, personality, and physical tests were given the subjects when they were first referred to the clinic, and the same battery was given four years later to the members of the group who had either continued glandular treatment or had been discharged from the clinic as cured. For the purposes of this talk the results in improvement in physical status will be omitted.

Two tests were used to study progress, or lack of it, in social adjustment during the period of the investigation. These tests were the Santa Barbara Social Behavior Rating Scale, which was devised by the Director of the Child Guidance Center, and the Bell Adjustment Inventory. (The latter was used with the puberent and post puberent group only). The improvement made by the group as shown by these two tests would indicate that considerable adjustment was achieved during the period of the investigation. How much of this was the result of medical treatment and how much the result of a realization of the child's problem by parents and teachers and consequently better home and school handling cannot be determined. However, it is certain that a marked degree of improvement in personal and social adjustment took place.

All of the forty-five subjects who were in the experimental group during the entire period of the investigation had been given the Progressive Achievement Test in 1936 and the test was repeated in 1940. The entire battery was given which yielded the total educational age of the subjects. However, because the test as a whole is over-loaded with material requiring reading ability it was thought best to use not only the total educational achievement score, but also to use two subtests, which were quite different, namely reading comprehension, which was entirely dependent on reading ability and arithmetic fundamentals, which was entirely independent of reading ability. The group showed the most improvement in reading comprehension, 9.65, followed very closely by improvement in arithmetic fundamentals, 9.20. However, the amount of improvement in reading comprehension and arithmetic fundamentals and general educational achievement, 7.85, which included a number of other factors such as language usage, spelling, and handwriting, all paralleled each other very closely. When critical ratios were calculated for these three factors they were all found to be significant. The average improvement in arithmetic fundamentals and reading comprehension amounted to nine quotient points, while that in educational achievement amounted to approximately eight points.

The 1916 Stanford Revision of the Binet-Simon Scale was used to study mental development in the subjects. The mean intelligence quotient of the forty-five subjects at the beginning of the experiment was found to be 94.35, while the mean of the same subjects in 1940 was found to be 101.0. The improvement in IQ was therefore only 6.65 points,

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which is only slightly larger than the standard error of the test. When the critical ration was calculated it was found to be 2.70 or insignificant. This would mean that there was some chance that the difference found in intelligence quotient between the initial and final test might be either reduced to zero or reversed. In interpreting these results it must be emphasized that there is a distinct difference between native mental capacity and mental alertness. There is no question but that the mental alertness, attention, and interest of these children improved. However, the test results would indicate that the basic native capacity remained constant. While there was no significant improvement in intelligence quotient between the first test and the final test it must be realized that the real effect of endocrine treatment on the intelligence quotient of hypothyroid subjects is found in the fact that normal mental development continued in most cases, whereas, a loss of from 20 to 30 per cent would probably have occurred if glandular treatment had not been instituted.

A study of the case histories of the group showed that six factors, namely, type of home, parents, school, glandular therapy, general intelligence, and age at which treatment was started are all of vital importance in the rehabilitation of the hypothyroid child. The remarkable gains which were made in personal and social adjustment indicate that that factor is more susceptible to either environmental or endocrinological influences, or possibly to both, than any other factor observed. School achievement is readily influenced by thyroid therapy, but improvement is caused by greater alertness, better attention, and more drive rather than by an increase in general intelligence.

If the major purpose of mental hygiene is to reduce human inefficiency caused by the malfunctioning of the mental processes then the endocrine program in all of its phases will be making a major contribution in mental hygiene because its greatest value in the final analysis will be in the returning of mentally inefficient individuals to the normal channels of human activity.

## HOW I TEACH READING

Report of Experiment to be submitted to Southern Section of State Curriculum Committee on Developmental Reading

Ethelyn Yount Weida, Franklin D.Roosevelt Junior High School, Compton

Before I begin the part of this reading program which deals with "How I teach reading" I believe an overview of the school system in which I teach might aid in the understanding of my problems, methods, techniques, and my results.

In the Compton Union Secondary School District there are five junior high schools operating under the 6-4-4 plan. The five schools have a continuing enrollment of 4260 students and the seventh grade in which reading is stressed a continuing enrollment of about 1200. However at the close of school when I found the median reading grade placement for the district in September 1941 and June 1942, I was able to obtain only 819 identical cases. That means that out of a continuing enrollment of about 1200 I could use only 819 students who had taken the test in both September and June. These figures give you a general idea of the large turnover in our classes. This year the turnover was a little larger than usual due to the fact that about 100 Japanese transferred from our district at the time of their evacuation, and that a goodly number moved in because of our proximity to war industries.

Since the fall of 1937 reading has been substituted for the traditional English course in all our seventh grades. This decided change came after studying the results from the Iowa Silent Reading tests, given after four months of intensive reading instruction in whole classes of the seventh and eighth grades. These results indicated clearly that the good readers improved their abilities in many cases as much and more than the poor readers did their deficiencies. Then it seemed only fair to include whole classes in our reading program rather than only those who fell far below their grade level.

In our seventh grade reading program we have adopted Dr. Lee's standard "that a child will not be successful in junior high school unless his reading ability is at the seventh grade level". This position is upheld in the 36th Yearbook when it states, "A grade score of 7.0 in silent reading is desirable by the end of the sixth grade."

At this point we will consider charts A. and B. These charts picture the 819 students who took the Iowa Silent Reading test in both September and June. The heavy line on chart A indicates the 7.0 level in reading ability that the entering seventh graders should have attained and the heavy line on chart B the 8.0 level in reading ability they should have reached by June. Ideally I suppose there should only be a single column on both charts, one at 7.0, the other at 8.0.

## Weida 2

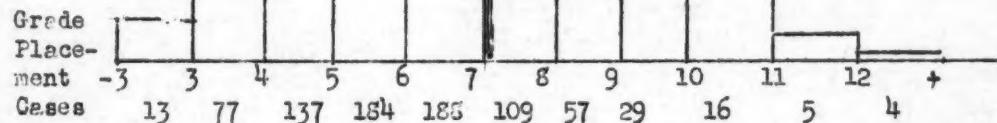
At this point we will consider charts A and B.

CHART A

September, 1941

819 Identical Cases

Median 5.9



1 - 12.0

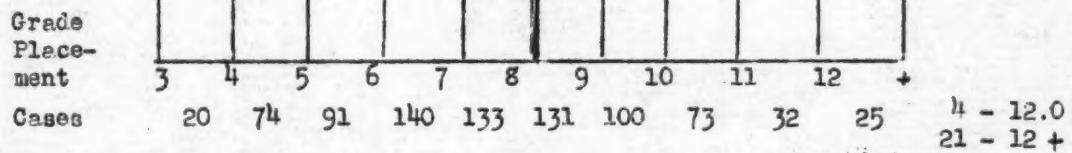
3 - 12 †

CHART B

June, 1942

819 Identical Cases

Median 7.6



These charts picture the 819 students who took the Iowa Silent Reading test in both September and June. The heavy line on chart A indicates the 7.0 level in reading ability that the entering seventh graders should have attained and the heavy line on chart B the 8.0 level in reading ability they should have reached by June.

## Weida 3

On chart A there is one more column than on chart B. In September there were 13 cases ranging from 1.0 to 3.0. By June these had been eliminated and 3.0 was our lowest grade level. The 12 column includes those who not only reached 12.0 but those who had reached 13.0, 14.0 and I call the whole column 12 plus. If you are familiar with the Iowa test you know that it stops at the 12.0 level but on chart B, 21 of the 25 cases here represented did better than 12.0, and 3 of the 4 on chart A did better than 12.0.

However in September the median grade placement was 5.9 or 1.1 grades below the point where it seems possible to achieve in junior high school. By June the median of this same group of students had been raised to 7.6 still four months below the grade level they should have attained but at a reading level where they might be expected to be successful in their school subjects.

Coming to the topic "How I teach reading" I am presenting an experiment which in the Franklin D. Roosevelt Junior High School of Compton I carried on the past school year at the suggestion of the members of the Southern Section of the State Curriculum Committee on Developmental Reading. We thought it would be interesting to know just what gains or improvement an average group of children would make in a year's time.

My principal gave me permission to select from the incoming seventh grade last fall 39 students with I.Q.'s ranging from 95-105, and with reading ability of 6.5 to 7.5. For this classification I used the results of reading tests given at the end of the sixth grade in the Compton Elementary District, which was the Progressive Achievement Test, and also the I.Q.'s from the California Test of Mental Maturity given in the same district. When this group of 39 took the Otis Mental Ability Test our range in intelligence widened from 83 to 115. When the Iowa Silent Reading Test was administered our range in reading also widened from 4.2 to 9.8. I am not discussing the reliability of the tests used in either case, but I'm just stating what happened. For a time it made me unhappy to find that I had this wide range but certainly it is an average situation which those of us who are teaching must come to recognize.

Charts C and D picture the distribution of the 38 students who took the Iowa Silent Reading Test in both September and June. Do you suppose this study might indicate that the parents of average children are more permanently located than other parents? Anyway only one boy dropped out and he was a delinquent whose family still reside in the community. On Chart C the heavy line is drawn at 7.0 and on chart D at 8.0. The median for September is 6.0 and for June 8.0 showing that even an average group can raise their reading achievement median two whole grades in one year when emphasis is placed on reading.

In most of the schools of our district the teachers correct their own tests. We feel it helps us to interpret the specific needs of our

## Weida 4

CHART C

Class of 38

September, 1941

Median 6.0

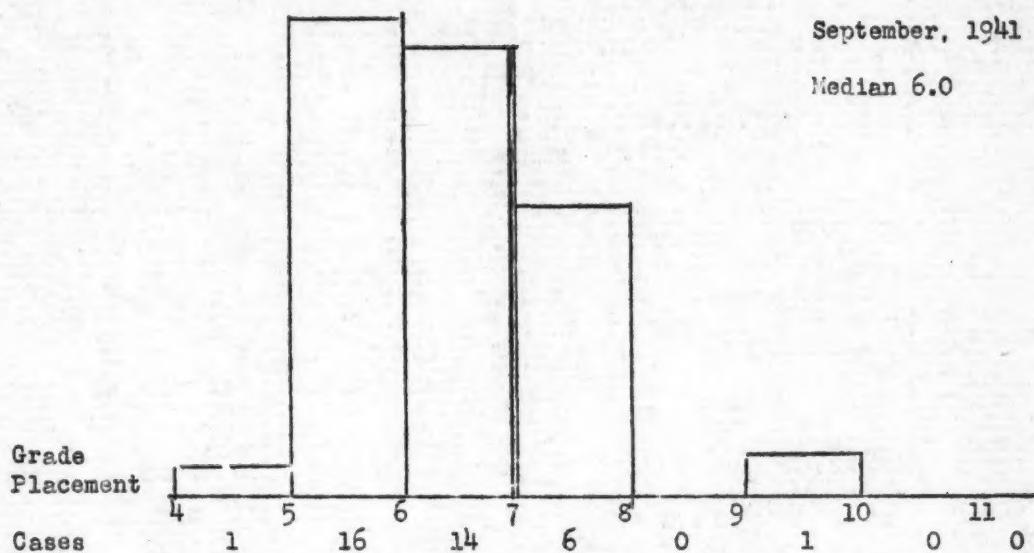
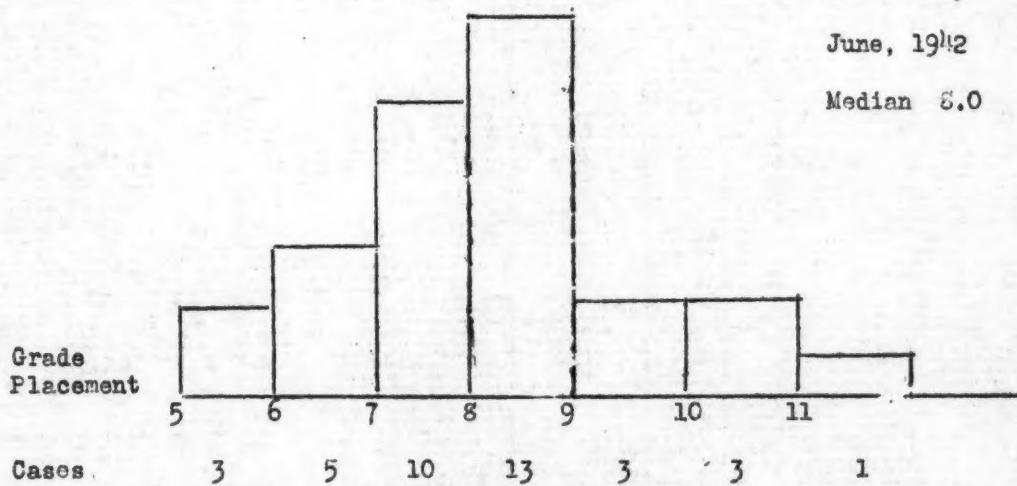


CHART D

Class of 38

June, 1942

Median 8.0



Charts C and D picture the distribution of the 38 students who took the Iowa Silent Reading Test in both September and June.

## Weida 5

pupils. A reading committee selects the tests we use. We feel that we cannot depend wholly on the results of any one test. The Stanford Achievement Test is given to all students entering the seventh grade. The reading grade placement score on the Stanford has always closely corresponded to the score on the Iowa with a tendency for a higher grade placement on the Stanford.

On the second and third day of school last fall I gave the Iowa Silent Reading Test. While the children were intent with reading I watched for lip readers, and eye difficulties. As soon as I had the reading tests corrected I passed them out to the class. We drew the profile chart. Each student draws a red line showing where he should be. Then if his profile follows closely the red line he has nothing to worry about. If his profile on the other hand falls far below the red line I point out to the student that it is no disgrace to be low, but that he must try to correct the phase or phases of reading in which he is poor and bring all his scores to the red line. Since the top sheet of our reading tests with the profile chart are kept in the Guidance Office I have the children copy their profile into their notebooks. Then together with the students I page through the test. I ask them where they have lessons like Test 1. They quickly reply in Social Studies. At this time I usually mention speed inquiring from the group who got how far and so on,. I lead them to see if one person reads only one paragraph while another reads five what little chance the one person has to achieve in any subject field. We turn to Test 2 and I point out the difference in the type of reading to be done. The class readily sees that the questions at the end of a chapter in Social Studies are of this nature. The section which deals with vocabulary even with good readers is likely to fall below the grade level. The remainder of the year many of our spelling lessons from our state text are presented with a view to increasing vocabulary, by the finding of synonyms, antonyms, and so forth. Our spelling words are often used in questions that can be answered by "yes" or "no" and alphabetizing of the spelling words or lists occurs frequently as a short home assignment. Sometimes I even teach the alphabet. Surprising it is to find that some seventh graders do not know their alphabet. They may know it when they can begin with "a" and give it straight through. Many of my students do not have the feeling of "f" coming before "m" or "m" before "r". When this is true a dictionary cannot be used efficiently. By means of these flash cards I help to overcome this difficulty. I try to have frequent five minute drills similar to the following for about the first month. Number your piece of paper from 1 to 25. I take out "a" for even the most confused child seems to know its position in the alphabet. With the cards well shuffled I ask the pupil to write the letter that comes before the letter I flash. If a group of the slower students need practice on the letters following those shown on the flash cards, drill may be given in the same way.

Many pupils ask how to make the capital letters. So for several years I have followed the custom of writing the alphabet, capital and small letters on a side board permanently. Though this aid to learning

## Weida 6

the alphabet was supplied at first to make written work easier I find that it enables the students to learn the alphabet more quickly.

I know the index is used constantly in Social Studies but two or three times a semester I give a stiff drill on the use of the index. This type of lesson I don't need to illustrate because we find such units frequently in print. I have my students bring their Social Studies texts to class, since these provide suitable material with which to work.

Year after year I have seen children with ambition but poor reading habits, discouraged with their report cards. For this reason I tell them frankly that unless their reading improves their grades will be poor. Like many schools we do not take into account when giving grades the mental age of the students except in a few remedial classes. With the profile chart before him the student sees his weaknesses and the teacher helps him to eliminate these. There is nothing to do but begin with a child where he is in both abilities and interests.

Some teachers prefer to use the conference method to acquaint their students with their reading disabilities. The class arrangement that I use has never seemed to embarrass any of my students and seems more expedient. I believe that the age of the students in a given class might determine the method to be used.

On the day that I gave the Iowa tests I noted that many of my students squinted held their heads too close to the desk, and rubbed their eyes. I didn't believe an experiment in reading could be considered scientific without knowing accurately the condition of the eyes of the students whose reading ability I was attempting to improve. How could I expect to improve the reading ability of a student if he couldn't see? Since we have only a part time physician for the district I knew my call for help wouldn't receive much attention. I enlisted the services of a local optometrist whom I knew to be interested in the reading of school children. I have refrained from mentioning his name in my community because of what his competitors might say. At this time I should like to say that Dr. Raleigh Neill of Compton without any compensation thoroughly examined the eyes of my 39 students. What he found was appalling! Only ten of my 39 pupils had perfect eyesight. A form letter was prepared and sent to the parents whose children's eyes needed care. When the examination began only one boy with crossed eyes was wearing glasses. This examination and form letter resulted in 7 students getting out glasses they had worn in their pockets, (one of these getting the lenses changed.) One girl took treatments for her eyes at the suggestion of the optometrist and one boy had his eyes examined but never obtained glasses. One boy only purchased glasses as a result of the examination. Three other parents responded to the letter with a note which signified some interest but no action was ever taken. Nineteen youngsters' vision was impaired but no measure was taken to relieve the condition. It is scarcely believable that 50% of our parents are disinterested enough as to ignore such a condition in their children but

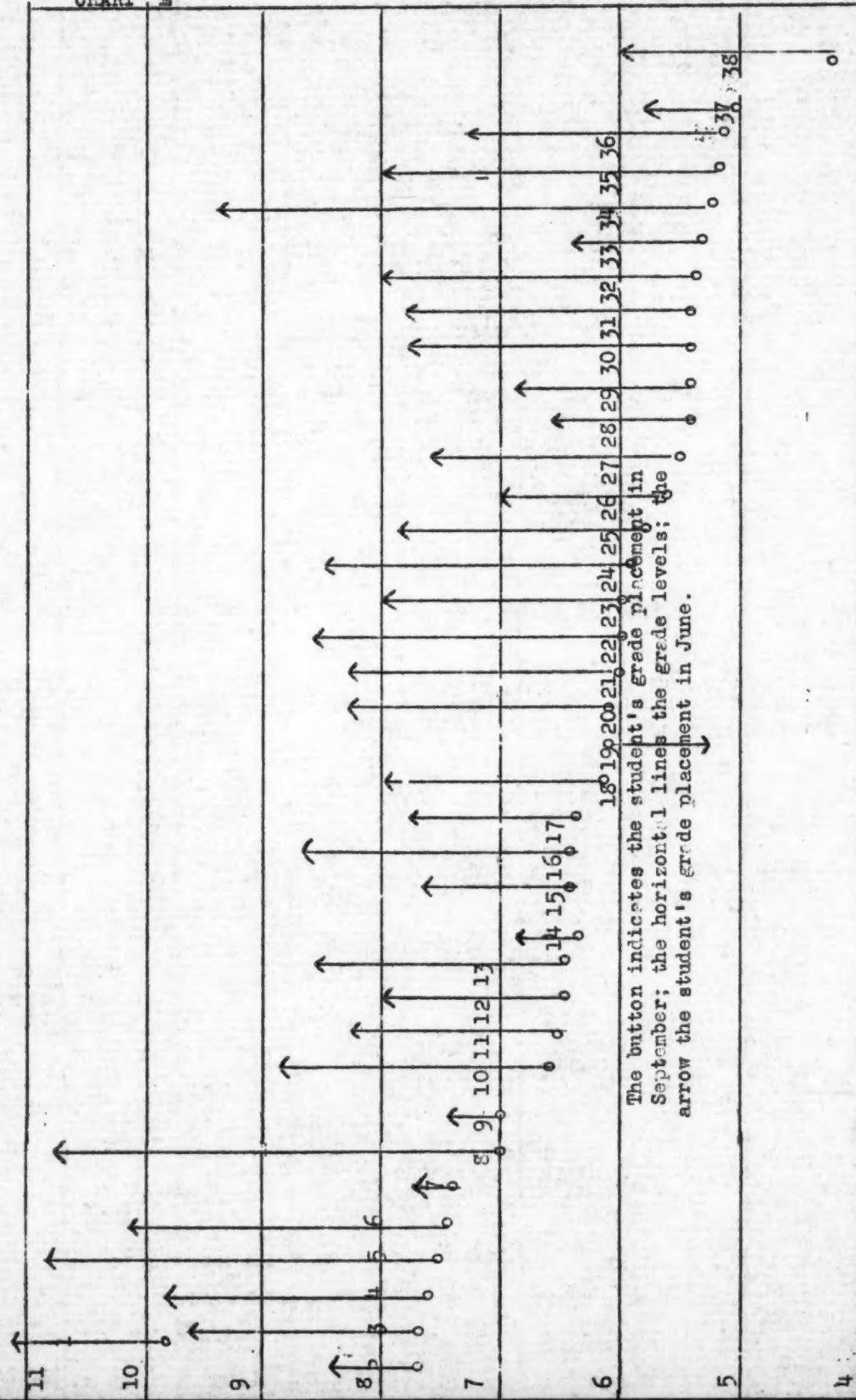
these are the figures.

Let us now glance at chart E which shows the Individual Gains of the Class of 38. Chart D showed the improvement in the group over Chart C, but since we are interested in the individual child a chart showing individual improvement seems appropriate. This chart reveals some interesting facts. The median mental age of this group was 12-10 or an intelligence grade placement of 7.2 and their median reading achievement grade placement was 6.0. Let us consider some of these individuals showing smaller gains, and, those who did not reach the 7.0 level by June, the point they should have reached to be successful in their junior high school subjects. Pupil 7 is the girl who improved only three months, and who took eye exercises after examination by the optometrist. Another factor may enter into this small gain--her intelligence grade placement of 6.2. Pupil 9 who made only four months improvement is a boy who had perfect eyesight, had an intelligence grade placement of 7.9, but his attendance was irregular. Pupil 14 who only made five months gain is a boy who needed glasses but never obtained them. His intelligence grade placement is 9.3 so he definitely is not reading up to his ability. Pupil nineteen is an example of the student who punctures the egotism of his teacher. He made no gains but actually went back. This boy needed glasses but very poor home conditions contributed to his lack of interest and retardation. He didn't seem to develop physically during the school year and I inquired about the strong smell of tobacco on him. He admitted smoking. I don't know just what reaction nicotine is supposed to have on a boy at this age. His intelligence grade placement was 7.7 above the median for the class. Pupil 28 who should have worn glasses but never obtained them had an intelligence grade placement of 7.6. Pupil 20 needed glasses and his intelligence grade placement was 5.8 and his reading achievement grade placement 6.9, or above his intelligence grade placement. Pupil 33 our next to the lowest in intelligence grade placement in the group made an improvement of eight months and her reading achievement grade placement was one year above her intelligence grade placement. Pupil 37 didn't need glasses and yet his reading achievement grade placement is eight months below his intelligence grade placement. Pupil 38 who had the lowest reading achievement grade placement in September improved 1.8 until she was two months ahead of her intelligence grade placement.

The materials chosen to help in the correction of these weaknesses I should like to recommend after a year's use to any teacher. First of all I wanted books that were not too difficult for the beginning of the seventh grade. Since I knew the median reading grade placement for our school for the past five years had fallen near 6.0 I felt a sixth grade reader would be acceptable. I finally chose two texts, "Reaching Our Goals" by Horn, Goodykoontz and Snedaker and the blue steel "Let's Read" by Roberts and Rand. "Reaching Our Goals" contains interesting informational material that is easily adapted to the improving of the abilities that needed strengthening. In it there are splendid main ideas, detail, dictionary, index, outlining, summarizing, graph and map lessons

## INDIVIDUAL GAINS OF CLASS OF 38

CHART E



## Weida 9

with a helpful Manual to guide the teacher. The stories in the blue steel "Let's Read" I knew would appeal to the interest of the children and I didn't overestimate them. The personal comments by other students on different books at the close of each unit always created an interest. The two texts made a well balanced diet. We have used "Flying the Printways" for several years. I used it this time as supplementary material, not that I am discarding it, but it is difficult for 6.0 readers to use day after day. When I wanted a good lesson on main ideas or details with interesting subject matter I used this book by Miss Hovicous. The children always find the material in it stimulating. A good Manual also accompanies "Flying the Printways."

Having three texts gave an opportunity to use a variety of materials. I find this true that the poorer the reader the more we must consider "interest" in the choosing of materials. I mentioned earlier in this paper that in our seventh grades we emphasize reading in the English class. However we do have spelling and on Friday after the spelling sentences are dictated I give the children the privilege of free reading the remainder of the period. The allotment of time might seem inadequate except for a course in recreational reading which all our seventh grade students have enjoyed since 1930. The students read quietly in the library books of their own choice three periods a week. There is no system of instruction. The position of the teacher is that of guide and advisor. She stimulates and directs when occasion demands. The only rule it is to be obeyed is that the students must read during the period.

This course in recreational reading aims to create the habit of reading books for pleasure in those students who have never read for fun. The only records we have of children's reading is a 3X5 card for each child on which he lists the titles of books he read and how he liked them. Other students use this teacher's file much as an adult uses annotated book lists. This shorter free reading period that I gave each Friday functioned in the same way. My classroom is just across from the library and my classes have free access to the shelves, besides about 200 volumes of easier stories in my room. Individual differences, especially in rate of reading, are partially cared for by allowing students to use the library when a given assignment is finished. If we learn to read by reading, our students have an opportunity to succeed. For after all, if I did raise the median reading achievement grade placement two years what does that help if I haven't increased the students' desire to read more extensively?

A total of 365 books was read by these thirty-eight students in one semester or better than nine books per student. Pupil 19 whose reading achievement grade placement was three months lower in June than September read eighteen books. Pupil 1 with the highest reading achievement grade placement read twenty-two books. Pupil 26 with the lowest intelligence grade placement read twelve books, and pupil 38 with the lowest reading achievement grade placement in September read twelve books. Pupil 14 who only gained five months in reading achievement grade place-

## Weida 10

ment read three books. This leads me to believe that Pupil 14 didn't achieve better possibly because of his eyes. I don't believe a boy like pupil nineteen would have read eighteen books if he needed glasses badly. Pupil 34 who was low in reading achievement in September read seventeen books. A list of books that several of the pupils read the first semester of this year appears at the end of this paper. The books are listed in the same order that the children reported them to the teacher.

Visual aids are suggested many times as a means for arousing interest. During the first semester I showed Treasure Island and the Adventures of Huckleberry Finn to this class with film slides and projector. In contrast to our movies the strips seemed colorless to me but the children enjoyed them thoroughly, and asked where to find those books in the library. In examining their booklists I find that this first interest carried over because nine of the children reported Treasure Island. Only two reported the Adventures of Huckleberry Finn and I believe I have the reason for this. I recommended the simplified edition of Treasure Island found in "Six Great Stories" but the volumes of Huckleberry Finn in our library are printed in fine type.

I suppose there is no teacher of reading who exhausts a given text before dipping into another. I want to make it clear that my teaching did not follow that pattern. If I'm working with main ideas I use all the texts and any other relevant materials with which I may be familiar. This next part of my paper deals with miscellaneous items that I use according to the needs of my group.

Our ninth and tenth grade teachers complain about their students not being able to follow directions. This year I tried to give all my assignments and instructions by writing them on the blackboard. Other years I have worked with the children through the directions in the texts but this year I refused to give any help if in my judgment the directions were clear. I felt that it did result in more independent work. The students realized they wouldn't finish the assignment unless they got down to business and dug out the directions for themselves. All our teaching must be tempered with kindness and understanding. If a child asked for the pronunciation of a word I sent him to the dictionary if I knew he was just too lazy to look it up, but if it were a student whose dictionary habits were poor I pronounced it. Then when I had a drill lesson with the dictionary I tried to give that student special help.

I have stated before that my spelling work each week centered around vocabulary building. With this average class I only gave phonics drill when the occasion demanded it except for the syllabification of the spelling words. The amount of phonics you teach at this level depends largely upon the needs of the group. In the book "Remedial Reading" by Monroe and Backus there is a section that deals specifically with this problem.

Each year I use word clues as Miss Hovious introduces them in

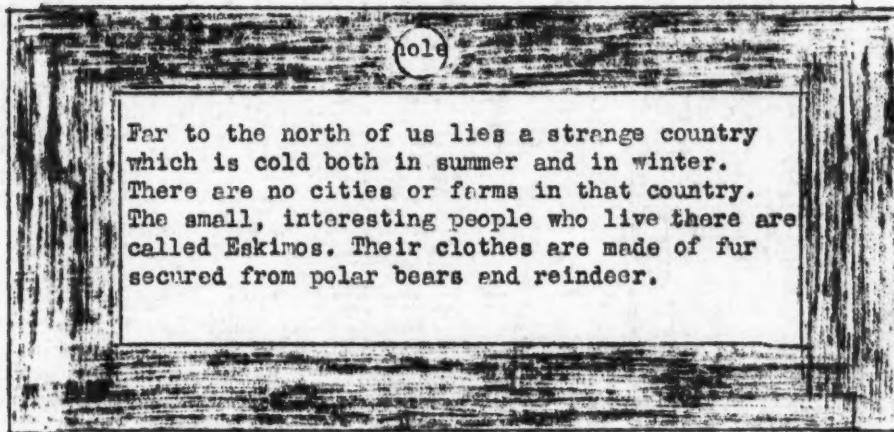
Weida 11

"Flying the Printways" as one means to the building of vocabulary. The children enjoy this type of exercise. "Monroe and Backus" also has a good section on word building.

Early in the year when we find that some children read five or six paragraphs while another reads one or two we discuss the reasons for this. By means of these peephole cards the youngsters see how the eyes move across the line of print.

#### Peephole Card

One student reads the story on the card while the other looks through the peephole.



I show them pictures of poor and good eye movements. The only mechanical drill I use and I'm not sure it is valuable but it at least serves to make the class conscious of eye movements, is the following sheet. These are passed out to each student.

	1	2	3
A	X	X	X
B	X	X	X
C	X	X	X
D	X	X	X
E	X	X	X
F	X	X	X

## Weida 12

I count with regularity A 1-2-3, B 1-2-3, etc. I number and letter the rows to make sure the children move their eyes in the right direction. The children are to hit the bull's eye in each cross with each count. This drill seems to help the child to see that his eye movement should be rhythmical, in a left to right direction, with a quick shift to line below. I immediately follow this reading exercise with a page from a book. As the students read from the book I count and with each third count a line is to be finished. We close the books when a paragraph is read and then we see how much each student has comprehended and remembered of the material just read. This exercise is always conducted with easy reading material.

Another device to gain more speed in reading is for the teacher to read a selection from the student's text. The student follows silently while the teacher reads it orally and phrases it correctly. To impress the class with the importance of correct phrasing the teacher may read a paragraph phrasing it incorrectly. This procedure always brings a laugh and an understanding of what we are trying to accomplish. When we first undertake phrasing we sometimes read orally together, with a leader. The teacher furnishes this leadership to begin with but it is soon passed around the class. To me proper phrasing cannot be over-emphasized. Without it there is no comprehension and no speed of reading.

Little was said to this group about the rate of reading. I did constantly remind the class of the necessity for greater concentration. When day dreaming entered the picture efficiency crept out. With the other reading disabilities mastered I firmly believe that rate takes care of itself. I believe too that texts chosen well within the reading ability of a class will automatically improve the reading rate.

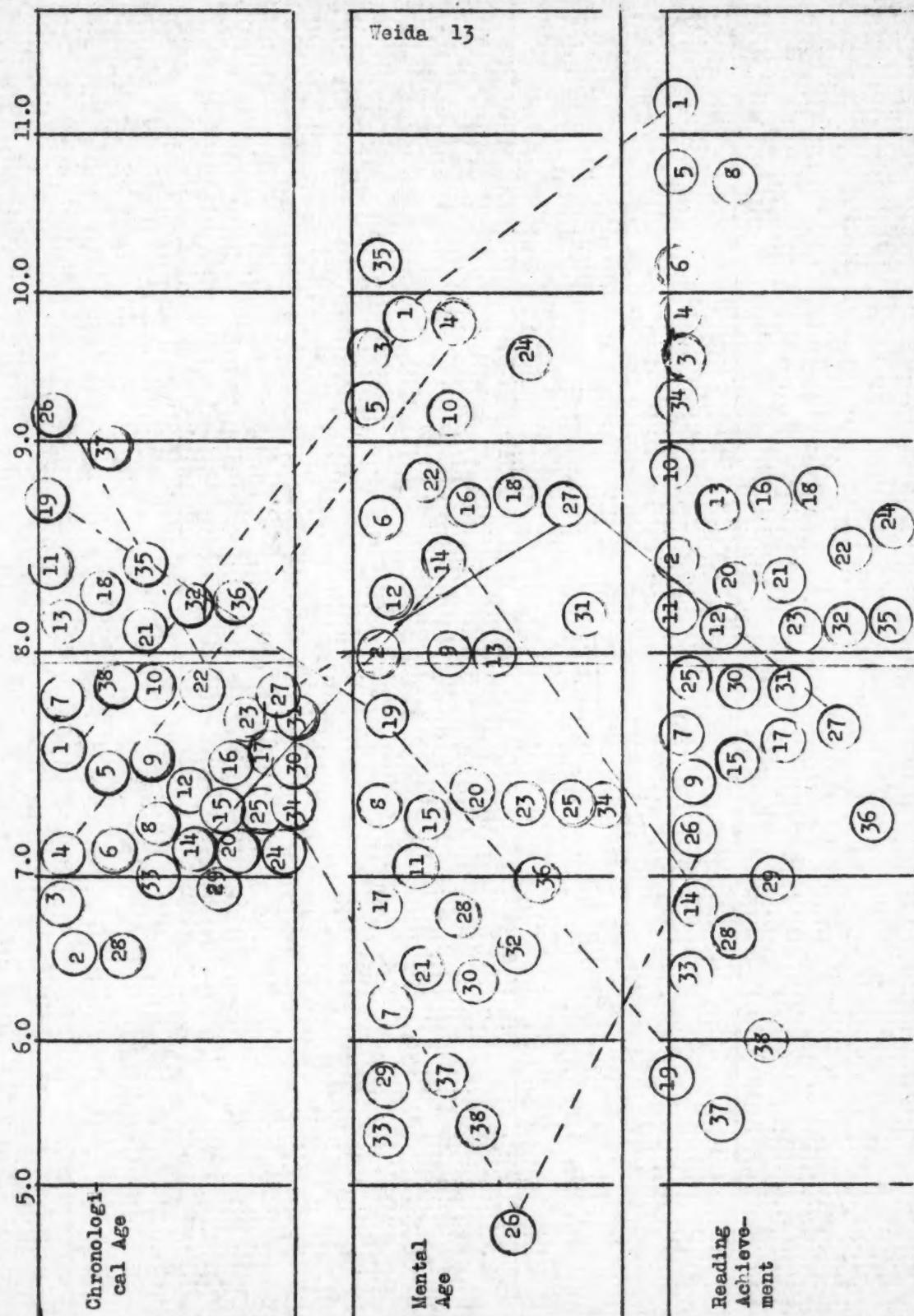
Chart F

With the solid lines I have indicated a few of the pupils whom we may help with further reading instruction; with the dotted lines I have shown a sampling of the pupils whose reading achievement we need not try to improve because they have already surpassed their mental age.

Let us take pupil 19 first, the boy who ranked lower in June than in September. The double line before 8.0 represents 7.9 where all the class should have been in June. He was older than many in his class, close to 7.9 in intelligence grade placement but more than two years lower in his reading achievement grade placement. We need to raise his reading at least two years.

Pupil 27 is a little younger than you might expect but with a higher intelligence grade placement than 7.9 and a reading achievement grade placement four months below 7.9. We might expect to improve her reading a whole year.

Pupil 14 is one of the younger members of his class, with a higher



By Grade Placement Norms

Weida 14

intelligence grade placement than 7.9 but a reading achievement grade placement 1.1 years below 7.9. This boy with glasses should increase his reading two years.

Pupils one and four are younger members of their class with a higher intelligence grade placements and with reading achievements as high or higher than their intelligence grade placements. These will need no special help.

Pupil 26 is the oldest member of the class, had the lowest intelligence grade placement and is reading 2.3 years above her mental grade placement. Our County Offices feel that it is an injustice to a pupil to place him under such stress and pressure. However I have never noticed any maladjustment with this pupil.

This chart F interests me in that it shows the least range in distribution in the chronological grade placement. In choosing this normal class I limited the intelligence and reading achievement grade placement definitely but the chronological age I ignored. Then when I constructed this chart I found a range of seven grades in both the intelligence and reading grade placements and only a range of three grades in the chronological age.

With improvement in reading ability I had expected similar improvement in all the subjects in which reading skills were involved. Comparing the Social Studies grades for the first six weeks of the first semester with the final grades for the second semester, I found that the gains were negligible. Seventeen pupils received the same grades both marking periods, twelve pupils improved, and the grades of nine pupils lowered. The condition of the eyes did not seem to be a factor in the improvement or lowering of grades. Some students who needed glasses improved their grades; others who had perfect vision received lower grades. This seems to indicate that other influences than vision and reading ability enter into the marks received by students.

Key to grades:

A, excellent; B, Good; C, Average; D, Barely Passing.

Our September reading scores for this Class of 38, a class as near average in intelligence and reading achievement grade placement as could be selected from about three hundred entering seventh grades, showed a definite need for a specific reading period not only to correct the marked deficiencies we found but to increase reading abilities to meet our students increasing reading needs. Our June scores, encouraging because of many gains, show seven individuals who still are not up to 7.0 and who should probably have further reading instruction.

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Table Showing Relation of Reading Achievement  
Grade Placement and Report Card Grades

	Reading Achievement Oct. Grade Placement		Report Card Grades October June
Pupil 1	9.8	11.1	C G
Pupil 5	7.5	10.8	B B
Pupil 8	6.9	10.8	C D
Pupil 6	7.3	10.1	C B
Pupil 4	7.5	9.8	C+ C
Pupil 3	7.6	9.6	B B
Pupil 10	6.5	8.7	C C
Pupil 24	5.9	8.4	B C
Pupil 20	6.0	8.2	A A
Pupil 23	5.9	8.0	D C
Pupil 35	5.3	8.0	B B
Pupil 17	6.2	7.6	C D
Pupil 38	4.2	6.0	C D
Pupil 37	5.2	5.7	D C

Key to grades: See preceding page.

Zeida 16

Pupil 1

Burrough, Mystery House  
 Wasson, Nancy  
 Wilde, Happy Prince  
 Snedaker, Forgotten Daughter  
 Sewell, Black Beauty  
 Stevenson, Treasure Island  
 Cunningham, Buckaroo  
 Eskridge, Umi  
 London, Call of the Wild  
 Seaman, Bitsy Finds a Clue  
 Stevenson, Shipwrecked  
 Pearson, Injuns Comin'  
 Hess, Castle Camp  
 Spyri, Heidi  
 Perkins, The Cave Twins  
 Heyliger, High Benton  
 Linderman, Stumpy  
 Donahey, Mysterious Mansions  
 Morris, Bad Penny  
 London, White Fang  
 Seaman, Disappearance of Anne Shaw  
 Wyes, Swiss Family Robinson

Pupil 14

Pryor, The Airplane Book  
 Collodi, Pinocchio  
 Eggleston, Hoosier School Boy

Pupil 19

Hooker, Star Indian Pony  
 Holland, Jim Hunter  
 Schultz, Alder Gulch Gold  
 Putnam, David Goes Voyaging  
 Perkins, The Cave Twins  
 Mukerji, Bunny, Hound and Clown  
 Fogler and Nicol, Rusty Pete  
 St. Nicholis, Aviation Stories  
 Sterne, No Surrender  
 Ames, Curly of the Circle Bar  
 McSpadden, Famous Detective Stories  
 Twain, Tom Sawyer Abroad  
 French, The Lance of Kanana  
 Twain, Adventures of Huckleberry  
 Meigs, Willow Whistle Finn  
 St. Nicholis, Radio Stories  
 Literary Guild, East of the Sun  
     and West of the Moon  
 Ames, Clearport Boys

Pupil 26

Haskell, Peggy Keeps House  
 Seaman, The Figure Head of the  
     "Polly"  
 Govan, Judy and Chris  
 Patri, Pinocchio's Visit to America  
 Fox, Mountain Girl  
 Smith, On the Long Road  
 James, Uncle Bill  
 Crew, Laughing Lad  
 Burton, Boy Scout of Bob's Hill  
 Crump, The Boy's Book of Airmen  
 Shannon, California Fairy Tales  
 Doone, Nauvat, the Brave

Pupil 34

Lane, Let the Hurricane Roar  
 Santee, Spike  
 Seaman, House in Hidden Lane  
 Ashmon, Mother's Away  
 Perkins, Pickanniny Twins  
 Birney, Mountain Chief  
 Birney, Two Little Navajos  
 Otts, Toby Tyler  
 Rolt-Wheeler, Wonder of War at Sea  
 Leetch, Annetje and her Family  
 Tarkington, Penrod  
 Heyliger, Don Strong of Wolf Patrol  
 Shenton, Riders of the Wind  
 Quirk, Freshmen Dorn Pitcher  
 Stevenson, Treasure Island  
 Tyler, 24 Unusual Stories  
 Meade, Teeny and the Tall Man

Pupil 38

Alcott, Little Women  
 Curtis, A Little Maid of Boston  
 Aldrich, A Lantern in Her Hand  
 Robinson, White Heron Feather  
 Custer, Boots and Saddle  
 Crew, Laughing Lad.  
 Barbour, The School that Didn't Care  
 James, Uncle Bill  
 Hinkle, Hurricane Pinto  
 Burton, Boy Scout of Bob's Hill  
 Williamson, Twenty Years Under the  
     Sea  
 Spyri, Heidi Grows Up

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Papers. First annual conference, 1936. 226 pages, mimeographed  
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